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TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1890.

No. 36.

THEODORE H. BUTLER, GEORGE W. EARHART, AND WILLIAM M. CRAWFORD, APPELLANTS,

vs.

GEORGE STECKEL AND FREDERICK STECKEL.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS.

FILED MARCH 1, 1887.

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1 Pleas in the circuit court of the United States for the northern district of Illinois, held at the United States court-rooms, in the city of Chicago, in the district aforesaid, before the Hon. Henry W. Blodgett, district judge of the United States for said northern district of Illinois, on Monday, the twenty-second day of March, in the adjourned March term of said court, in the year of our Lord one thousand eight hundred and eighty-six, and of our Independence the one hundred and tenth year.

WM. H. BRADLEY, *Clerk.*

THEODORE H. BUTLER, GEORGE W. EARHART, and WILLIAM M. CRAWFORD *vs.* GEORGE STECKEL and FREDERICK STECKEL. } In Chancery.

NORTHERN DISTRICT OF ILLINOIS, *ss:*

Be it remembered that on the twenty-eighth day of March, 1883, came the complainants, by their solicitor, and filed in the office of the clerk of the circuit court of the United States for the northern district of Illinois, at Chicago, in said district, their bond for costs and bill of complaint in said above-entitled cause; which said bond and bill are respectively in the words and figures following, to wit:

2 *Bond for Costs.*

UNITED STATES OF AMERICA, *Northern District of Illinois,* } *ss:*

THEODORE H. BUTLER, GEORGE W. EARHART, & WILLIAM M. CRAWFORD *vs.* GEORGE STECKEL and FREDERICK STECKEL. } In Equity.

I hereby enter myself security for costs in this cause and promise to pay all costs which may accrue to the opposite party in this action or to any of the officers of this court, and, in default of payment by the complainants of any costs ordered or adjudged to be paid by them, hereby agree and stipulate that execution may issue against my property for any costs taxed against complainants.

Dated this 28 day of March, A. D. 1883.

FRANK BAKER.

Endorsed: Filed M'ch 28, A. D. 1883. W. H. Bradley, clerk.

3 *Bill.*

UNITED STATES OF AMERICA, }
Northern District of Illinois, } ss:

In the Circuit Court of the United States, Northern District of Illinois.

To the honorable the judges of the circuit court of the United States for the northern district of Illinois:

Theodore H. Butler, George W. Earhart, and William M. Crawford, of Columbus, in the State of Ohio, bring this their bill of complaint against George Steckel and Frederick Steckel, of Chicago, in the said northern district of Illinois; and thereupon your orators complain and say that the said Theodore H. Butler, George W. Earhart, and William M. Crawford, are citizens of the United States and are the true and original inventors or discoverers of a new and useful improvement in "bretzel-cutters," which said improvement was not known or used by others before the said invention and discovery thereof by the said Theodore H. Butler, George W. Earhart, and William M. Crawford; that the said Theodore H. Butler, George W. Earhart, and William M. Crawford did afterwards and on the 6th day of July, A. D. 1882, apply to the Commissioner of Patents of the United States for letters patent for such improvement, and having fully and in all respects complied with all the require-
4 ments of the law in that respect, and especially having made oath that they believed themselves to be the true inventors and discoverers of such improvement — bretzel-cutters, and having also paid into the Treasury of the United States the sum of thirty dollars, and having presented to the said Commissioner a petition setting forth their desire to obtain an exclusive property in the said invention and machine, and praying that letters patent for that purpose might be granted to them, and having also delivered and filed in the Patent Office a written description of their said invention and discovery and of the manner of using the same and accompanied the same with drawings and written references in such full, clear, and exact terms as to distinguish the same from all other things before known and so as to enable any person skilled in the art with which the said invention is most nearly connected to make and use the same, which said description was duly signed by your orators and attested by two witnesses, *and* thereupon letters patent for the said invention in due form of law, under the seal of the Patent Office of the United States, signed and countersigned by the proper officers of the United States, and bearing date on the 20th day of March, A. D. 1883, were granted, issued, and delivered to
5 your orators, whereby was granted and secured to them, their heirs or assigns, for the term of seventeen years from the date thereof the full and exclusive right to make, use, and vend the said invention and machine, which is entitled in the said letters patent an improvement in bretzel-cutters, all of which will more fully ap-

pear in and by the said letters patent, to which, for greater certainty, your orators crave leave to refer.

And your orators further show that they are in the full enjoyment of the rights and interests acquired by them as aforesaid, and that said rights and interests have been and are of great value to your orators, and your orators are entitled to all the damages occasioned by the infringement of the said letters patent by the manufacture, sale, or use of bretzel-cutters made in violation of the said letters patent and are by law entitled to sue for and receive the same to their own use.

And your orators further show unto your honors that they believe, and therefore charge the fact to be, that they, the said Theodore H. Butler, George W. Earhart, and William M. Crawford, were the original and first inventors and discoverers of the improvement in bretzel-cutters patented by them as aforesaid and described and claimed in the said letters patent as aforesaid, and that the same were — known or used by any other person before the in-
6 vention and discovery thereof by them, the said Theodore H. Butler, George W. Earhart, and William M. Crawford.

And your orators further show unto your honors that before the said 20th day of March, 1883, and after the said 6th day of July, 1882, the said defendants, at the city of Chicago, in the said northern district of Illinois, did make and use a bretzel-cutter substantially the same in its construction and mode of operation as the said machine of your orators described and claimed in said letters patent, and that since the said 20th day of March, A. D. 1883, the defendants, well knowing the premises and the rights and privileges secured to your orators by the said letters patent, and contriving to injure your orators and deprive them of the profits, benefits, and advantages which might & otherwise — have accrued to them at the city of Chicago, in the district aforesaid, have unlawfully and wrongfully used and operated and are now using and operating a bretzel-cutter substantially the same in its construction and mode of operation as the said bretzel-cutter of your orators described and claimed in the said letters patent, and in violation of the exclusive privileges therein and thereby granted to your orators, patentees as aforesaid, and in infringement of said letters patent and of the claims therein contained, and with the said bretzel machine cut and
7 made for sale and sold a large number and quantity of bretzels, but the precise amount and quantity are unknown to your orators, but, on information and belief, your orators state that said defendants have with and by the said bretzel-cutter and the operation thereof made great gains and profits.

And your orators further aver and show unto your honors that the said defendants continued to use and operate in their bretzel bakery the said bretzel-cutter above mentioned and refused, though warned and requested by your orators to desist from such use or to pay to your orators any part of the gains or profits arising or accruing from the use of such bretzel-cutter, by means whereof said defendants have injured and are still greatly injuring your orators, and have prevented and still are preventing your orators from re-

ceiving the gains and profits from the use of the exclusive right to use the invention and improvement claimed in and by said letters patent, which your orators otherwise and but for said wrongful acts of the said defendant would have obtained and received, and that your orators have reason to believe and do believe that the said defendants will continue to use said bretzel machine in violation and infringement of your orators' rights, secured to them as aforesaid, and against their consent and allowance unless enjoined and
8 restrained by the order and injunction of this honorable court.

To the end, therefore, that the said George Steckel and Frederick Steckel may, if they can, show why your orators should not have the relief herely prayed and may, upon their several and respective corporal oaths and according to the best and utmost of their several respective knowledge, information, remembrance, and belief, full, true, direct, and perfect answer make to such of the several interrogatories hereinafter mentioned and set forth as by the note hereinunder written they are respectively required to answer—that is to say, first, whether the said letters patent were granted and issued as above stated; second, whether the said defendants have at any time and when and during what period of time used any bretzel-cutter and when, and whether or not the same was not subsequently the same in its construction and mode of operation as the said bretzel-cutter of the said complainant- described and claimed in their said letters patent, and that the said defendants may answer the premises, and that they may be decreed to account with and pay over to your orators the gains and profits which they have made by such unlawful use of said bretzel-cutter, and also the damages your orators have thereby sustained—

9 And may it please your honors, the premises considered, to grant unto your orators the writ of injunction issued out of and under the seal of this honorable court, according to the form of the statute in such case made and provided, perpetually enjoining and restraining the said defendants, their clerks, attorneys, agents, servants, or workmen, from directly or indirectly using the said bretzel machine now in their possession and heretofore and now used by them, and from using, making, or vending any one or more bretzel-cutters substantially the same in its construction and mode of operation as your orators' bretzel-cutter described and claimed in their said letters patent, and that the said bretzel-cutter now in the possession of the defendants or under their control may be destroyed or delivered up to your orators, and for such other and further relief as may be just and equitable.

And may it please your honors to grant to your orators a provisional or preliminary injunction, issuing out of and under the seal of this honorable court, enjoining and restraining the defendants, their agents, attorneys, servants, and workmen, to the same purport, tenor, and effect hereinbefore prayed for in regard to said perpetual injunction.

And may it please your honors to grant unto your orators a writ

of subpœna of the United States of America, issuing out
10 of and under the seal of this honorable court, directed to the said Frederick Steckel and George Steckel, defendants, commanding them, on a day certain therein to be named and under a certain penalty, to be and appear in this honorable court, then and there to answer all and singular the premises and to stand to, perform, and abide such further order, direction, and decree as may be made against them.

And your orator, as in duty bound, will ever pray.

THEODORE H. BUTLER,
GEORGE W. EARHART,
WILLIAM M. CRAWFORD,
Complainants,
By FRANK BAKER, *Their Solicitor.*

FRANK BAKER,
Counsel for Complainant-.

UNITED STATES OF AMERICA, }
Northern District of Illinois, } ss:

WILLIAM M. CRAWFORD makes oath & says that he is one of the complainants in the foregoing bill named, and has heard the same read and knows the contents thereof; that the said bill is true of his own knowledge except as to those matters which are therein stated to be on his information and belief, and as to those matters he believes it to be true, and that this deponent verily believes the said Theodore H. Butler, George W. Earhart, and William M.
11 Crawford to have been the first and original inventors of the improvements claimed in said letters patent, and that the same had not been known or described before the invention and discovery thereof by them, the said Theodore H. Butler, George W. Earhart, and William M. Crawford.

WILLIAM M. CRAWFORD.

Subscribed in my presence and sworn to before me this 28 day of March, A. D. 1883.

H. S. STODDARD,
U. S. Com'r.

The said defendants are each required to answer all the above interrogatories.

Endorsed: Filed Mar. 28, 1883. W. H. Bradley, clerk.

12 On the same day, to wit, on the twenty-eighth day of March, 1883, there issued out of said clerk's office a writ of subpœna in said entitled cause; which said writ, together with the return of the marshal thereto attached, are in the words and figures following, to wit:

Subpœna.

UNITED STATES OF AMERICA, } ss:
Northern District of Illinois, }

The United States of America to George Steckel and Frederick Steckel, Greeting:

We command you and every of you that you appear before our judges of our circuit court of the United States of America for the northern district of Illinois, at Chicago, in said district, on the first Monday in the month of May next, to answer the bill of complaint of Theodore H. Butler, George W. Earhart, and William M. Crawford, this day filed in the clerk's office of said court, in said city of Chicago, then and there to receive and abide by such judgment and decree as shall then or thereafter be made upon pain of judgment being pronounced against you by default.

To the marshal of the northern district of Illinois to execute.

Witness the Hon. Morrison R. Waite, Chief Justice of
[SEAL.] the Supreme Court of the United States of America, at Chicago aforesaid, this 28th day of March, in the year of
13 our Lord one thousand eight hundred and eighty-three, and of our Independence 107th.

W. H. BRADLEY, *Clerk.*

MEMORANDUM.—The above-named defendants are notified that unless they and each of them shall enter their appearance in the clerk's office of said court, at Chicago aforesaid, on or before the day to which the above writ is returnable the complainants' bill will be taken against them as confessed and a decree entered accordingly.

W. H. BRADLEY, *Clerk.*

Special Deputy's Return.

UNITED STATES OF AMERICA, } ss:
Northern District of Illinois, }

Know all men by these presents that I have appointed and by these presents do appoint Geo. N. Jones my true and lawful deputy to execute the annexed writ—T. H. Butler *et al. vs.* Geo. Steckel *et al.*—and to make return of the execution thereof according to law.

A. M. JONES, [SEAL.]
U. S. Marshal for the Northern District of Illinois.

I have served the annexed writ in the following manner, to wit: Upon Frederick Steckel therein named on the 29th day of March, A. D. 1883, also upon George Steckel therein named on the 3rd day of April, A. D. 1883, by personally delivering to each of them
14 a true copy of the same on the aforesaid days.

A. M. JONES,
United States Marshal,
By GEO. N. JONES,
Special Deputy.

UNITED STATES OF AMERICA, } ss:
Northern District of Illinois, }

GEO. N. JONES, being duly sworn, deposes and says that he served the annexed writ as stated in the foregoing return, and that the expense returned by him, in addition to the fees, was actually incurred, and that the same is according to law.

GEO. N. JONES.

Subscribed and sworn to before me this 9th day of April, A. D. 1883.

[SEAL.] SAMUEL C. HAYES,
Notary Public.

Endorsed: Filed Apr. 28th, A. D. 1883. W. H. Bradley, clerk.

Afterwards, to wit, on the fifth day of May, 1883, came the defendants, by their solicitors, and filed in said clerk's office their appearance in said entitled cause; which said appearance is in the words and figures following, to wit:

Appearance.

Circuit Court of the United States, Northern District of Illinois.

15 THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.* } In Equity.

We hereby enter our appearance for the defendants in the above-entitled cause.

Dated Chicago, April 30th, 1883.

BANNING & BANNING.

Endorsed: Filed May 5, 1883. W. H. Bradley, clerk.

Afterwards, to wit, on the seventh day of May, in the adjourned May term of said court, 1883, in the record of the proceedings thereof in said entitled cause, before Hon. Henry W. Blodgett, district judge, is the following entry, to wit:

Order.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.* } In Chancery.

Now come the complainants, by their solicitors, and their motion for injunction now comes on to be heard, and, the defendants and their solicitor not appearing, it is ordered by the court that the prayer for injunction be allowed, and that a writ of injunction issue herein as prayed for in complainant's bill of complaint.

16 On the same day, to wit, on the seventh day of May, 1883, there issued out of said clerk's office a writ of injunction in

said entitled cause; which said writ, together with the return of the marshal thereto attached, are in the words and figures following, to wit:

Injunction Writ.

Circuit Court of the United States of America.

NORTHERN DISTRICT OF ILLINOIS, *ss:*

The United States of America to George Steckel and Frederick Steckel and to your counselors, attorneys, solicitors, trustees, and agents, and to each and every of them, Greeting:

Whereas it hath been represented to the judges of our circuit court of the United States for the northern district of Illinois, in chancery sitting, on the part of Theodore H. Butler, George W. Earhart, and William M. Crawford, complainants in their certain bill of complaint, exhibited in our said circuit court on the chancery side thereof, before the judges of said court, against you, the said George Steckel and Frederick Steckel, to be relieved touching the matters complained of, in which said bill it is stated, among other things, that you are combining and confederating with others to injure the complainants, touching the matters set forth in
17 the said bill, and that your actings and doings in the premises are contrary to equity and good conscience—

And it being ordered that a writ of injunction issue out of said court upon said bill, enjoining and restraining you and each of you as prayed for in said bill, we ,therefore, in consideration thereof and of the particular matters in said bill set forth, do strictly command you, the said George Steckel and Frederick Steckel, your counsellors, attorneys, solicitors, trustees, and agents, and each and every of you, that you do absolutely desist and refrain from directly or indirectly using the bretzel machines now in their possession and heretofore and now used by them, said defendants, and from making, using, or vending any one or more bretzel-cutters substantially the same in construction and mode of operation, the same as the bretzel-cutter of the said complainants as described and claimed in the letters patent mentioned in the bill of complaint herein, until this honorable court, in chancery sitting, shall make other order to the contrary. Hereof fail not under the penalty of what the law directs.

To the marshal of the northern district of Illinois to execute and return in due form of law.

Witness the Hon. Morrison R. Waite, Chief Justice of the
18 Supreme Court of the United States of America, at Chicago, in said district, this seventh day of May, in the year of our
[SEAL.] Lord one thousand eight hundred and eighty-three, and of our Independence the one hundred and seventh year.

W. H. BRADLEY, *Clerk.*

Special Deputy's Return.

UNITED STATES OF AMERICA, }
Northern District of Illinois, } ss:

Know all men by these presents that I have appointed, and by these presents do appoint, Geo. N. Jones my true and lawful deputy to execute the annexed writ—T. H. Butler *et al. vs.* Geo. Steckel *et al.*—and to make return of the execution thereof according to law.

A. M. JONES, [SEAL.]
U. S. Marshal for the Northern District of Illinois.

I have served the annexed writ in the following manner, to wit: By reading the same to and in the presence and the hearing of George Steckel and Frederick Steckel, and also by delivering to each of them a true copy of the same, on the 11th day of May, A. D. 1883.

A. M. JONES,
United States Marshal,
By GEO. N. JONES,
Special Deputy.

UNITED STATES OF AMERICA, }
Northern District of Illinois, } ss:

19 Geo. N. Jones, being duly sworn, deposes and says that he served the annexed writ as stated in the foregoing return, and that the expense returned by him, in addition to the fees, was
t the same is according to law.

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and these defendants pray that as soon as they can discover the names and residences of the parties by whom such dies were made and used, and where used, they may be permitted to insert such names and places and make apt allegations of such matters in this their answer.

These defendants deny that the complainants were the joint inventors of the said pretended invention, and allege that, as these defendants believe, said pretended invention was the work of only one or two of the said complainants and not the work of all three of them.

These defendants further say, and in answer particularly to the second interrogatory in the said bill of complaint contained, that they have used a bretzel cutter or die for cutting bretzels since some time in the month of February, 1883, and up to the present time or since the filing of complainants' bill herein, but these de-
24 fendants say that the bretzel-cutters or dies used by them as above, which are the only ones they have used since the 20th of March, 1883, are not the same in construction and mode of operation as the bretzel-cutters described and claimed in complainants' said patent sued on; that they have examined a copy of said patent and understand the invention therein described and claimed; that the differences in the construction and mode of operation that exist between complainants' patented bretzel-cutter and that used by them are material differences that are important in the actual working of the machine; that such differences have been tested by them and the fact shown that without these differences a bretzel-cutter constructed and operated exactly like that described and claimed in the patent sued on would not be a practical and useful bretzel-cutter and would not work successfully or satisfactorily.

These defendants deny positively and emphatically that they have

Injunction Bond.

Know all men by these presents that we, George Steckel and Frederick Steckel, of Chicago, Illinois, as principals, and Jacob Roth, John McMahon, and Martin De Tamble, of the same place, as sureties, are held and firmly bound unto Theodore H. Butler, George W. Earhart, and William M. Crawford, of Columbus, Ohio, their heirs, administrators, executors, or assigns, in the penal sum of one thousand dollars ($1,000); for the payment of which we bind ourselves, our heirs, administrators, and legal representatives, jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas the said Theodore H. Butler, George W. Earhart, and William M. Crawford have commenced a suit in the United States circuit court for the northern district of Illinois against the above-bounden George Steckel and Frederick Steckel for infringement of letters patent No. 274,264, issued March 20, 1883, to the said Butler, Earhart, and Crawford for an improvement in bretzel-cutters;

And whereas in said suit a preliminary injunction has been ordered and issued against the said defendants in accordance
28 with the prayer of said bill; and whereas the court has ordered that the said preliminary injunction be dissolved upon the said defendants giving to the said complainants a bond in the penal sum of one thousand dollars, conditioned for the payment of all damages that the said complainant shall or may sustain by the infringement of said letters patent by said defendants:

Now, therefore, if the above-bounden defendants, George Steckel and Frederick Steckel shall well and truly pay any decree that may be rendered against them in the above-mentioned cause, and also all damages that said complainants in said cause may sustain by reason of the infringement by defendants of the said letters patent No. 274,264 in case in said cause they shall be found to have infringed the same, then this obligation to be null and void; otherwise to remain in full force and effect.

In witness whereof we have hereunto set our hands and seals this 30th day of May, A. D. 1883.

FREDERICK STECKEL.	[SEAL.]
GEO. STECKEL.	[SEAL.]
MARTIN DE TAMBLE.	[SEAL.]
JACOB ROTH.	[SEAL.]
JOHN McMAHON.	[SEAL.]

Approved.

H. W. BLODGETT, *Judge.*

Endorsed: Filed June 1, 1883. Wm. H. Bradley, clerk.

29 Afterwards, to wit, on the second day of June, 1883, came the complainants, by their solicitor, and filed in said clerk's office their replication to the answer of the defendants in said entitled cause; which said replication is in the words and figures following, to wit:

Replication.

NORTHERN DISTRICT OF ILLINOIS, *ss:*

In the Circuit Court of United States, Northern District of Illinois, of the May Term, A. D. 1883. In Chancery.

The replication of Theodore Butler, George W. Earhart & William M. Crawford, complainants, to the answer of Frederick Steckel & George Steckel, defendants.

These repliants, saving and reserving to themselves all and all manner of advantage of exception which may be had and taken to the manifold errors, uncertainties, and insufficiencies of the answer of the said defendants, for replication thereunto saith that they do and will aver, maintain, and prove said bill to be true, certain, and sufficient in the law to be answered unto by the said defendants, and that the answer of the said defendants — very uncertain, evasive, and insufficient in the law to be replied unto by these repliants; without this, that any other matter or thing in the said answer contained material or effectual in the law to be replied unto and not
30 herein and hereby well and sufficiently replied unto, confessed or avoided, traversed or denied, is true; all which matters and things these repliants are ready to aver, maintain, and prove as this honorable court shall direct, and humbly pray as in and by their said bill they have already prayed.

FRANK BAKER,
Solicitor for Complainants.

Endorsed: Filed this 2d day of June, 1883. Wm. H. Bradley, clerk.

Afterwards, to wit, on the eleventh day of June, in the adjourned May term of said court, 1883, in the record of the proceedings thereof in said entitled cause, before Hon. Henry W. Blodgett, district judge, is the following entry, to wit:

Order.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.* } In Chancery.

On motion of the defendants, by Mr. Banning, it appearing that the defendants have filed an injunction bond herein, it is ordered that the preliminary injunction herein be, and the same is hereby, dissolved.

31 Afterwards, to wit, on the sixth day of August, in the July term of said court, 1883, in the record of the proceedings thereof in said entitled cause, before Hon. Thomas Drummond, circuit judge, is the following entry, to wit:

Order.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.*
} In Chancery.

On motion of the defendants it is ordered that James Sangster, Esq., of Buffalo, New York, be appointed special examiner to take testimony in this cause at Buffalo under the sixty-seventh rule in equity.

Afterwards, to wit, on the twenty-fourth day of August, 1883, there was filed in said clerk's office a stipulation in said entitled cause; which said stipulation is the words and figures following, to wit:

Stipulation.

In the Circuit Court of the United States, Northern Dist. of Ills.

THEODORE H. BUTLER *et al.*
vs.
FREDERICK STECKEL *et al.*
} Chancery.

It is hereby stipulated that the answer of the defendants may be amended within twenty days from this date.

32 Chicago, Aug. 24, 1883.

FRANK BAKER,
Sol. for Compl's.

Endorsed: Filed August 24, 1883. Wm. H. Bradley, clerk.

On the same day, to wit, on the twenty-fourth day of August, 1883, came the defendants, by their solicitors, and filed in said clerk's office their amended answer in said entitled cause; which said amended answer is in the words and figures following, to wit:

Amended Answer.

Circuit Court of the United States, Northern District of Illinois.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL and FREDERICK STECKEL.
} In Equity.

And now come the defendants in the above-entitled cause and, by leave of court first had and obtained, amend their answer by inserting the following allegations, namely:

And these defendants, further answering, say that said letters patent No. 274,264 are void, because the said Butler, Earhart and
33 Crawford were not the original and first inventors or discoverers of the pretended inventions and combinations therein described and claimed, but that said pretended inventions and combinations and every substantial and material part thereof

were, prior to their alleged invention and discovery thereof, in common and public use in this county, and particularly were known to and used by the following persons at the following places, to wit: George J. Hill, J. W. Ruger, A. Ruger, A. E. Adaney, —— Doritz, —— Schemm, all of the city of Buffalo, in the State of New York, at said Buffalo; Samuel A. Rice, of the city of Kansas City, in the State of Missouri, at said Kansas City, and S. S. Marvin & Co., of the city of Pittsburgh, in the State of Pennsylvania, at said Pittsburgh.

And these defendants further aver and charge that said letters patent No. 274,264 are void, because the said Butler, Earhart and Crawford were not the original and first inventors or discoverers of the inventions and combinations therein described and claimed, but that said pretended inventions and combinations and every material and substantial part thereof were, prior to their alleged invention and discovery thereof, shown and described in the following letters patent of the United States, to wit: No. 29295, dated July 24, 1860, to C. Marsh; No. 163,332, dated May 18, 1875, to J. W. Ruger and George J. Hill; No. 184,786, dated November 28, 1876, to William Lampert and Henry Huber; No. 224,446, dated February 10,
34 1880, to William Lampert and Henry Huber, assignors of one-half to Butler, Earhart and Crawford, and No. 230,294, dated July 20, 1880, to Isaac W. Lincoln; and also because, in view of the state of the art at and prior to their alleged invention and discovery, no invention was required in making said pretended inventions and combinations described and claimed in their said letters patent No. 274,264.

BANNING & BANNING,
Solicitors for Def'ts.

Endorsed: Filed August 24, 1883. Wm. H. Bradley, clerk.

35 Afterwards, to wit, on the tenth day of November, in the adjourned October term of said court, 1884, in the record of the proceedings thereof in said entitled cause before Hon. Walter Q. Gresham, circuit judge, is the following entry, to wit:

Order.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.*
} In Chancery.

It is ordered that this cause be set for hearing on the eighteenth day of December next.

Afterwards, to wit, on the twenty-third day of March, in the adjourned March term of said court, 1885, in the record of the proceedings thereof in said entitled cause, before Hon. Henry W. Blodgett, district judge, is the following entry, to wit:

Order.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.*
} In Chancery.

Now come the parties, by their solicitors, and now comes on to be heard the motion of the complainants for leave to take additional evidence of George W. Earhart, William M. Crawford, John C. Taylor, and Alexander Rarig at Columbus, Ohio; and, after
36 hearing the arguments of counsel, the court sustains said motion and allows such evidence to be taken within thirty days, conditioned that said complainants pay all expenses of taking such evidence and a solicitor's fee of one hundred dollars to cover his expenses in attending the taking of such evidence.

Afterwards, to wit, on the fourth day of February, 1886, in the December term of said court, 1885, in the record of the proceedings thereof in said entitled cause, before Hon. Henry W. Blodgett, district judge, is the following entry, to wit:

Order.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.*
} In Chancery.

Now come the parties, by their solicitors, and, this cause being set for hearing this day, now comes on to be heard upon the pleadings and proofs, and, after hearing the arguments of counsel in part, it is ordered that further hearing herein be postponed until to-morrow morning.

37 Afterwards, to wit, on the fifth day of February, 1886, in the December term of said court, 1885, in the record of the proceedings thereof in said entitled cause, before Hon. Henry W. Blodgett, district judge, is the following entry, to wit:

Order.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.*
} In Chancery.

Now again come the parties, by their solicitors, and this cause again comes on to be heard upon pleadings and proofs, and, after hearing the concluding arguments of counsel, the court takes the same under advisement.

38 Afterwards, to wit, on the twenty-second day of March, 1886, there was filed in said clerk's office the opinion of Judge Blodgett in said entitled cause; which said opinion is in the words and figures following, to wit:

Opinion.

T. H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.*

BLODGETT, *J.*:

This is a bill for an injunction and accounting by reason of the alleged infringement of letters patent No. 274,264, granted March 20, 1883, to the complainant, for a "bretzel-cutter." In their specifications the patentee says: "This invention relates to an improvement in molds or dies for stamping or cutting out bretzels, having for its object more especially to cause the product or pretzel to have the appearance of a hand-made pretzel, and it consists in the peculiar construction of the mold or die to effect this result, and other details of construction substantially as hereinafter more fully set forth. * * *

"In carrying out our invention we construct the die after the fashion or configuration of the ordinary bretzel in its general shape."

The bretzel has heretofore been chiefly made by rolling out a strip of dough and bending it into nearly a semi-elliptical or heart
39 shape and crossing the ends and laying them upon the outer rim of the circle. This form leaves, of course, three interior openings, and in cutting the bretzel from the sheet of dough as it passes under the cutter provision must be made for the interior scrap which is cut from the dough, and this is done by having an opening extending through the plate and cutting dies, so that the interior scrap is carried off through the tubes connected with these openings.

The patent contains three claims, as follows:

1. A flat die for cutting bretzels, having the bow a, the loop a', the intermediate twisted portion, and the end a^3 a^4, and provided with the central creaser a^6, the side creasers a^5 a^5, and the end creasers a^7 a^7, projecting into the bow, substantially as shown and described.

2. In a bretzel-cutter, the combination of the die A, separated, as described, for the reception of the passage of the scraps, and the expelling studs F, with said studs, the guide rod C, the base B, provided with feet or projections B', the springs B, perforated plate D, and the end piece E, substantially as shown and described.

3. A flat bretzel-shaped die, having three off-bearing entry scrap passages or channels and perforations for the expelling studs, in combination with the expelling studs, substantially as shown and described.

internal scrap must be removed. These old dies also show expelling studs by which the cut figure is expelled or pushed out of the die after being cut — performs the same function that is performed by the expelling studs in the patent.

It is true, I doubt not, that it required considerable mechanical skill to make a die which would cut a bretzel from dough so as to imitate a hand-made bretzel, because the hand-made bretzel is somewhat clumsily shaped, as the parts are bent, twisted, and laid upon each other, and it was undoubt-ly a matter requiring some
41 study, effort, and experiment to make the shape of the die correspond with the external formation of the bretzel.

This, however, seems to me not to involve invention, but mere mechanical skill. The cutter might be compelled to experiment some—that is, cut several dies—but that is not invention.

The proof also shows that a large number of persons before these patentees had attempted to make a machine which would cut bretzels, and considerable money and time seems to have been expended in efforts to produce such a machine; but the noticeable thing in regard to all these early efforts was the fact that most of those engaged in them were trying to draw out and twist the dough by machinery rather than to cut or stamp dough from a flat sheet while others were endeavoring to cut them with dies set in revolving cylenders, and as soon as the idea of cutting the dough from a flat sheet was conceived the difficulty seems to have vanished and success followed the effort, as the only change made was to adopt the old letter dies to the shape of a bretzel. Why men should have groped so long in the effort to make a bretzel-cutter or bretzel machine with the ordinary cake-cutters before them it is difficult to understand, but the proof shows that they did so; but I cannot see that the mere fact that others were so long wandering by the
42 wrong path is any evidence that it requires invention to accomplish what has been done by taking the direct path pursued by these patentees. All they had to do was to make the die

Order.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.*
} In Chancery.

And now come the complainants and pray an appeal in this cause to the Supreme Court of the United States, which is granted upon their filing a good and sufficient appeal bond in the sum of one thousand dollars, with sureties, to be approved by the clerk.

45 Afterwards, to wit, on the ninth day of July, 1886, there was filed in said clerk's office an appeal bond in said entitled cause; which said appeal bond is in the words and figures following, to wit:

Appeal Bond.

Know all men by these presents that we, Theodore H. Butler, George W. Earhart, and William M. Crawford, as principals, and Spaulding & Merrick, as surety, are held and firmly bound unto George Steckel and Frederick Steckel in the full and just sum of one thousand dollars, to be paid to the said George Steckel and Frederick Steckel, their certain attorney, executors, administrators, or assigns; to which payment, well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly and severally, by these presents.

Sealed with our seals and dated this — day of July, in the year of our Lord one thousand eight hundred aud eighty-six.

Whereas, lately, at a stated term of the circuit court of the United States within and for the northern district of Illinois, in a suit depending in said court between Theodore H. Butler, George W. Earhart, and William M. Crawford, complainants, in equity, and George Steckel and Frederick Steckel, defendants, a final decree dismissing the complainants' bill of complaint and awarding costs to defendants was rendered against the said Theodore H. Butler,
46–331 George W. Earhart, and William M. Crawford, and the said Theodore H. Butler, George W. Earhart, and William M. Crawford having obtained the allowance of an appeal and filed a copy thereof in the clerk's office of the said court to reverse the said decree in the aforesaid suit, and a citation directed to the said George Steckel and Frederick Steckel, citing and admonishing them to be and appear at a Supreme Court of the United States to be holden at Washington the second Monday of October next:

Now, the condition of the above obligation is such that if the said Theodore H. Butler, George W. Earhart, and William M. Crawford shall prosecute their said appeal to effect and answer all damages

and costs if they fail to make their plea good, then the above obligation to be void; else to remain in full force and virtue.

THEO. H. BUTLER. [SEAL.]
G. W. EARHART. [SEAL.]
WM. M. CRAWFORD. [SEAL.]
SPAULDING & MERRICK. [SEAL.]

Sealed and delivered in presence of—

CHAS. R. THOMPSON.
C. L. BUTLER.

Witness to signature of Spaulding & Merrick:

E. L. THURSTON.

Approved:

H. W. BLODGETT, *Judge.*

Endorsed: Filed July 9, 1886. Wm. H. Bradley, clerk.

Earhart and Crawford, and No. 230,294, dated July 20, 1880, to Isaac W. Lincoln; and also because in view of the state of the art at and prior to their alleged invention and discovery, no invention was required in making said pretended inventions and combinations described and claimed in their said letters patent No. 274,264.

BANNING & BANNING,
Solicitors for Defendants.

REPLICATION, in usual form.

STIPULATION.

It is hereby stipulated and agreed by said parties that the bretzel cutter now here shown and marked "Complainants' Exhibit A," in above entitled cause, shall be admitted in evidence in said cause; and it is admitted and stipulated by said defendants that they have, in their bakery in the City of Chicago, since March 20, 1883, used bretzel cutters identical with said machine or cutter "Exhibit A;" and it is further stipulated that the certified copy of letters patent No. 274,264, marked complainants' "Exhibit B," may be admitted in evidence in lieu of the original letters patent.

FRANK BAKER,
Solicitor for Complainants.

BANNING & BANNING,
Solicitors for Defendants.

COMPLAINANTS' PRIMA FACIE EVIDENCE.

Deposition taken in the Circuit Court of the United States for the Northern District of Illinois, in chancery, in the cause wherein Theodore H. Butler, George W. Earhart and William M. Crawford are complainants and Frederick Steckel and George Steckel are defendants, by consent of parties.

Present—Frank Baker, Esq., for the complainants, and Ephraim Banning, Esq., solicitor for the defendants.

And thereupon came William M. Crawford, who being duly sworn in said cause, was examined in chief by Frank Baker, Esq., and testified as follows:

Q. 1. You may state your name, age and residence.

A. William M. Crawford; age, 44 years; residence, Columbus, Ohio.

Q. 2. Are you one of the complainants in this suit?

A. I am.

Q. 3. What is your business and what is the business of your co-complainants?

A. Wholesale manufacturers of coffees, spices, crackers and confectionery.

Q. 4. What experience have you had in the manufacture of bretzels or bretzel making machinery?

A. Well, I have had considerable. I have been in the manufacture of bretzels for several years, and have made some considerable bretzel machinery.

Q. 5. Are you familiar with the letters patent of the United States to the complainants in this suit, No. 274,264, here shown you now?

A. I am; I am familiar with it and am one of the patentees.

Q. 6. You may state who were the inventors of the invention therein described.

A. The inventors were Theodore H. Butler, George W. Earhart and myself.

Q. 7. Have you seen and examined the bretzel cutter now before you, marked "Complainants' Exhibit A," in this case?

A. Yes, sir; I have.

Q. 8. You may state wherein, if at all, the said bretzel cutter conflicts with or infringes upon the invention described and claimed in the said letters patent to the complainants in this case.

A. In the first place, by a flat die of a bretzel shape and having the bow, the loops, the intermediate twisted portion and the ends with the central creaser, the side creasers, the end creasers—that is, the end creasers projecting into the bow. That is substantially as to the first claim.

Q. 9. Now, you may state what differences, if any, you find between the machine that is now produced and shown, and the machine or parts of machine described and claimed in the first claim of said letters patent.

A. I find none,

Q. 10. You may proceed with your answer as to the second claim in said letters patent, stating wherein, if at all, said machine conflicts with or infringes upon said second claim.

A. In the combination of the perforated die for the reception and passage of scraps, with expelling studs, guide rods, base provided with feet or projections, springs and perforated plate.

Q. 11. You may state what elements of the combination described and claimed in the second claim of said letters patent you find used and employed in said machine; and what elements, if any, of the combination described and claimed in said second claim of said letters patent are omitted in the machine now shown you, which is marked "Complainants' exhibit A."

A. They are all used and none omitted. The only difference that I can see at all in the machine is simply the

shape of the expelling studs—ours being round while theirs are oblong and elliptical.

Q. 12. You may state what elements, if any, of the combination described and claimed in the third claim of said letters patent, you find used and employed in the machine now shown you marked "Complainant's Exhibit A."

A. I find the bretzel shape die, having three off bearing scrap passages or channels and perforations for the expelling studs in combination with the expelling studs.

Q. 13. You may state whether or not any elements of the combination described in said third claim are omitted in said machine now shown you, marked "Complainants' Exhibit A."

A. There are none omitted.

Q. 14. You may state what difference, if any, you find between the machine as described in said letters patent, drawings and specifications, and the machine now shown you.

A. There are no differences with the exception of the shape of the expelling studs.

Q. 15. And as to the difference in the expelling studs, you may state whether the difference extends to the use and operation of the expelling studs or only to the form.

A. Only to the form.

Cross Examination by Mr. Banning.

X Q. 16. The three patentees named in this patent are partners in business, are they not?

A. Yes, sir.

X Q. 17. How long have they been using dies for cutting bretzels?

A. Well, about two years.

X Q. 18. Can you point out in each of these claims the part or parts suggested or invented by each of the patentees. Can you state what parts you suggested or invented; can you tell any of them?

A. The off bearing scrap passages I suggested. These are the three central openings in the die for the purpose of picking or carrying up the central scrap, having an off bearing or flaring aperature.

X Q. 19. You were the first to suggest that off bearing scrap passage; what was done after you suggested it?

A. Well, it was constructed in that way.

X Q. 20. Had the dies or the patterns been constructed substantially as it now is, except it did not have that feature, before that suggestion?

A. Yes, sir.

X Q. 21. Is that feature the only part that you suggested that you recollect of?

A. I cannot recollect whether I suggested anything else or not, at the present time.

X Q. 22. Can you recollect any features that your partners, or either of them suggested?

A. Mr. Earhart first suggested the practicability of making a bretzel die for the purpose of making bretzels.

X Q. 23. You used another form of bretzel cutter or die before making this one, did you not?

A. Yes, sir.

X Q. 24. What was the difference between that and this one?

A. Well, there was a very material difference. The machine that we used previous to making this, was composed of two dies, one operating above the other, a male and female, located upon the periphery of the cylinders.

X Q. 25. Did that die have any off bearing passages that you used before?

A. I think not.

X Q. 26. Did it have a flat die for cutting bretzels?

A. No, sir.

X Q. 27. When was this so-called invention first made by you and your co-patentees?

A. Well, the idea was conceived about the fore part of the year 1879. I think we made little pencil sketches of it or a part of it at that time, and we got full drawings and specifications in May or June of 1882.

X Q. 28. When did you make the first bretzel die cutter, as described in this patent?

A. Well, that was in May or June of 1882.

X Q. 29. Then from the fore part of 1879 until May or June of 1882 nothing whatever was done in the matter?

A. I didn't say that.

X Q. 30. Well, please state what was done during that period.

A. We talked the feasibility of this thing over, and made suggestions in regard to how it should be made, etc.

X Q. 31. You made no drawings, patterns or full size dies during all that period?

A. I cannot answer that question because I was away from home a great deal of the time and it might have been done during my absence from home.

X Q. 32. Are you certain that the only part you suggested was the off bearing passages you have mentioned.

A. I am not certain.

X Q. 33. What is your best recollection about that?

A. Well, my recollection and judgment in regard to the matter is that we talked about the construction of this machine in a general way and discussed it. I probably with the rest suggested some things, but I don't remember.

X Q. 34. Have you sold any of these dies as described in the patent?

A. We have not.

WILLIAM M. CRAWFORD.

Eleven o'clock A. M., Thursday, July 12, 1883. Present: Frank Baker, Esq., for the complainants, and Thomas A. Banning, Esq., for the defendants.

And thereupon came Henry Gross, Esq., who being duly sworn in said cause, was examined in chief by Mr. Baker, and testified as follows:

Q. 1. Please state your name, age and residence.

A. Henry Gross; age, about 69 years. My residence is really here as I am here most of the time, although my family are in Tiffin, Ohio.

Q. 2. Have you been examined as an expert in patent causes?

A. I have been called in a case once or twice.

Q. 3. Have you had any experience in the examination of patents, soliciting or obtaining a patent for yourself or others?

A. I have had considerable experience in obtaining patents for myself. I have taken out in the neighborhood of 50, and I have had some experience in looking up the cases. That is about my experience in that business.

Q. 4. Have you seen and examined the letters patent marked "Exhibit B," issued to the complainants in this cause and now shown you?

A. I looked them over a few minutes ago.

Q. 5. Have you also seen and examined the bretzel cutter marked "Exhibit A," and now produced and shown you?

A. I have.

Q. 6. You may state wherein, if at all, the said machine, "Exhibit A" infringes upon or conflicts with the first claim of the patent now shown you marked "Exhibit B."

A. Well, that shows the flat die just the same as is claimed here [indicating "Exhibit B"]. I think they are identically the same.

Q. 7. Then, between the machine now presented, "Exhibit A," and the machine, or parts of machine, described in the first claim of the patent, you say you find no difference?

A. No difference; no, sir.

Q. 8. Now, as to the second claim of the patent, you may state what elements, if any, in the combination described and claimed in the second claim of said patent you find used and employed in the machine now shown you.

A. I find the same thing except in a different form. The plungers are different from what they are in this.

Q. 9. You may state whether or not all of the elements described in that claim you find in that machine.

A. All that is claimed in that I find in this machine.

Q. 10. You may state whether you find in that machine any element omitted that is described and claimed in said second claim.

A. No, I don't see anything omitted, except the change of the plungers—the form.

Q. 11. Now, as to the third claim. You may state what elements described and claimed in the combination, in said third claim of the patent, you find used and employed in the machine, "Exhibit A," and what omitted.

A. I don't see that there are any omitted; I think that they are all used here, from the appearance.

Q. 12. Please state and explain the difference or differences between the expelling studs, as described in the patent, and the expelling studs as used and employed in the machine now shown you, marked "Exhibit A."

A. In the machine the expelling studs seems to fill up the whole space following the bretzel. In the patent they are round studs that passes through there.

Q. 13. What difference, if any, do you find in the use and operation between the expelling studs described in the patent and the expelling studs found in the machine?

A. Well, I presume that the studs in the machine would be more apt to throw it out fully than the round studs would be in the other, but the principle is the same.

Q. 14. You may state whether, in your opinion, the difference between the expelling studs found in the machine and the expelling studs described and claimed in the patent is one of substance or one of form only.

A. One of form only. I think it requires no invention to make the change.

Cross Examination by Mr. Banning.

X Q. 15. Did you ever see the complainants' bretzel cutter in operation?

A. I did not.

X Q. 16. What is the object of the invention?

A. I presume for cutting out bretzels.

X Q. 17. In what respect, if any, does the bretzels cut by this machine differ from those made by hand?

A. Well, I don't know that I conld tell you the difference.

X Q. 18. Is there any difference?

A. They look the same to look at them. I don't know — of course, a person can tell whether they are made by hand or machine; they can tell the difference. I don't believe there is any difference in the bretzels.

X Q. 19. What is a bretzel?

A. Well, I don't know how to answer that. It is a kind of cake that is used. I don't know what they are made of.

X Q. 20 Isn't it a hard cake of a particular form?

A. I suppose it is a kind of cake that is made for eating.

X Q. 21. And are they not always made of the same form whether they are made by hand or machine?

A. I think they are all of the same form as far as I have seen. I don't know as they are made any different; they may be.

X Q. 22. Then a bretzel cutter is a cutter to cut a cake in the particular form of a bretzel, as distinguished from other forms?

A. Yes sir.

Signature of witness waived by agreement of parties.

STATE OF ILLINOIS, }
COOK COUNTY. } ss.

I, Eugene S. Bean, a notary public in and for Cook County, Illinois, solemnly certify that the above named William M. Crawford and Henry Gross were by me first duly sworn to testify to the truth, the whole truth, and nothing but the truth in the said cause; that the foregoing depositions were reduced to writing in the presence of said witnesses and signed by said Crawford in my presence and that the signature of said Henry Gross to his deposition was waived, and that during the taking of said depositions both parties were represented by counsel, and that same were taken on July 11 and 12, 1883.

EUGENE S. BEAN,
Notary Public,
Cook Co., Ill.

Notary fees, $10.

Paid by complainants.

DEFENDANTS' EVIDENCE.

Proofs for final hearing, taken on the part of the defendants in the above entitled cause, pursuant to the 67th Equity Rule, as amended, before James Sangster, special examiner, at his office in Buffalo, N. Y., Sept. 14, 1883. Present: Ephraim Banning, Esq., of counsel for defendants, and Frank Baker, Esq., of counsel for complainants.

GEORGE J. HILL, a witness produced, sworn and examined on the part of the defendants, deposes and testifies as follows, in answer to questions by Mr. Banning:

Q. 1. State your name, age, occupation, place of residence, and what business you have been engaged in for the last eight or ten years.

A. George J. Hill; age, 54 years; present occupation, machine printer in the office of the Buffalo *Morning Express*, I reside in Buffalo, N. Y. I have been with the *Express* between three and four years. Prior to that I was engaged between two and three years with the Cash Recording Machine Co. of this city; before that time I was with J. W. Ruger & Co., cracker machinery manufacturers, this city, for five or six years.

Q. 2. Are you acquainted with the machinery used by bakers generally?

A. I am; yes, sir.

Q. 3. Do you know what a bretzel is?

A. Yes, sir; I have known ever since I was about 12 years of age.

Q. 4. Did you ever have anything to do with the getting up of a bretzel cutting machine? If so, when, where and who with?

A. I did; in the years of 1875 or 1876, somewhere in those two years—in J. W. Ruger's shop. A young man, by the name of Adam Adamy, was a partner with me in getting up the machine, and a young man by the name of

John Berry helped work on it; and Charles Waldo did the engraving for the clearers and formers of the machine for us.

Q. 5. State how that machine was constructed, and all about your making it.

A. The machine was constructed with two cross heads. The first cross-head from the dough brake carried the cutting device for the bretzel; the second cross-head carried the former of the bretzel, that is, the part that gives it its twist and forms it round on top and bottom, with the aid of a lower die, or former, corresponding with the upper. The lower die worked automatically with the machine so as to meet the upper one at every down stroke, and at every upper movement of the cross-head the lower die would recede back and take the dough from the cutter ready to be formed. We made the model; it was a foot long, nine inches in width and about 12 inches high; we made it to go into the Patent Office. The frames and cross-head were made of wood, with iron bearings; the cutters were made of steel; the punches were made of iron; the formers and clearers were cast of brass; the shafting, gearing and connecting rods were of iron.

Q. 6. Did you ever cut bretzels with that machine?

A. Yes, sir. We cut bretzels with the same punch and die that was intended for the model, and laid them in the former by hand, and formed them there by the pressure of the hand—the two formers working on dowel pins, which kept them in line from top to bottom, or until they met. We had to press them by hand on account of moulds being in two parts, and because we wanted to satisfy ourselves that it would make a perfect bretzel, before attaching the iron moulds to the model. There was a great deal of labor attached to the lower mould on account of its clearer for raising the bretzel after formed and ready to be carried on the apron.

Q. 7. In what respect, or to what extent, were the bretzels thus formed like hand-made bretzels?

A. They had the twist and shape of a hand-made bretzel on both sides, the former being on both top and bottom.

Q. 8. Do you mean by that they had the appearance of hand made bretzels?

A. I do; by experience.

Q. 9. Was there any scrap passage in your bretzel cutter, above described? If so, how was it arranged, and into what did it deliver the scraps?

A. The scraps were carried off on an extra apron, in a sheet of dough, the part not used for the bretzel, and deposited in an ordinary dough box. The scraps were taken from the first cross-head, from the dough brake.

Q. 10. Look at the specification and drawings of the Butler, Earheart & Crawford patent, No. 274,264, sued on in this cause, and state whether you understand them and the devices described and shown in them.

A. Yes, sir.

Q. 11. Looking at the claims of this patent separately, state what device, if any, the bretzel cutter, made by you and Adamy had that you find specified in such claims.

Objected to by complainants.

A. As to the first claim of this patent, our bretzel cutter had a flat cutting surface, which deposited the dough on the under former so as to give it the twist, and clearers in such former for clearing the bretzel from the same. The clearers, F, act the same as our lower clearers did, on the same principle for clearing the dough from the cutter and mould combined. Ours had the same forming of bretzel that this cutter has, only our former rounded the bretzel on both sides. As to the second claim, ours had a clearing device about the same as represented by the expelling studs F. As to the third claim, there is nothing that I can see

that interferes with us, unless it is the flat bretzel-shaped die having three off-bearings.

Q. 12. Did the bretzel cutter, made by you and Adamy, have a flat, bretzel-shaped die, with three off-bearing internal scrap passages, or channels, or not?

Objected to by complainants, as leading.

A. The cutter was flat, with three bearings, but no internal scrap-clearing.

Q. 13. What were those three bearings for?

A. To shove out the scrap.

Q. 14. Then, what was the difference between your three bearings used to shove out the dough, and the "three off-bearing internal scrap passages, or channels," mentioned in the third claim of this patent?

Objected to by complainants, as leading.

A. The difference is, their scrap went up through the cup, and ours remained on the flat surface and was carried off onto the apron, and by it to the dough box; that is all the difference between them.

Q. 15. Did your flat, bretzel-shaped die have perforations for the expelling studs, or clearers?

Objected to by complainants as leading.

A. It had clearers for the purpose of clearing the bretzel from the frame, which fit into perforations in the mould, the perforations being of the same shape as the clearers.

Q. 16. How were your clearers constructed and arranged to operate, as compared with the expelling studs F, of this patent?

Objected to by complainants, as leading.

A. Our clearers formed part of the shape of a bretzel, and was located at different points of the bretzel so as to enable it to clear it readily. The difference between the expelling studs of this patent and our clearers is, that these are round, and ours was in the shape of different parts of the bretzel.

Q. 17. Did your flat bretzel-shaped die have the bow a mentioned in the first claim of this patent?

Same objection.

A. Yes sir.

Q. 18. Did it have the loop $a'a'$ of this claim?

Same objection.

A. Yes, sir; we could not form a bretzel without them.

Q. 19. Did it have the ends a^3 and a^4 of this claim?

Objected to as leading.

A. It did.

Q. 20. Was it provided with a central creaser, as a^6 of this claim?

Same objection.

A. It was.

Q. 21. Did it have side creasers, as a^5a^5 of this claim?

Same objection.

A. Yes, sir; it did.

Q. 22. Did it have end creasers, as a^7a^7, projecting into the bow as in this claim?

Same objection.

A. Not exactly the same as these; the ends of ours extended out further than these to give it more the shape of a hand made bretzel; that is all the difference.

Q. 23 How were all these parts arranged with reference to each other and to the flat die for cutting the bretzel, as compared with the arrangement shown in the drawings of this patent?

A. Our machine worked similar to this cutter, when attached to the machine, with the difference, that ours did not form a bretzel until after the second movement of the cross-head; after the first one was formed it formed a bretzel at every movement of the cross-head; that is, the first movement of the punch, or cutter, cuts out the dough and leaves the part that is to be made into the bretzel in the lower part of the former, or what might be called the female die; then,

as the punch or cutter ascends, this former, containing the dough for the bretzel, is thrown forward by an internal cam directly under the upper part of the former ready for the down stroke of the cross head, which down stroke formed and completed the bretzel. There were no other differences between our arrangement of the parts mentioned in the question and the arrangement shown in the drawings of this patent, except that our bretzels showed the twist on both sides.

Q. 24. Did, or did not, the bretzel cutter made by you and Adamy have a die perforated for the reception and passage of the scraps, and expelling studs or clearers?

Objected to, as leading.

A. It had no passage for expelling the scrap, but had clearers in the former but not in the cutter.

Q. 25. Was the bottom bretzel shaped die made by you and Adamy, perforated so as to receive the scrap and permit of its passage?

A. No, sir; the bottom die was made to receive the dough in the shape of a bretzel, ready to be formed.

Q. 26. Did your bretzel cutter have guides or uprights, as C in the second claim of this patent?

A. No, sir; it had the dowel pins to guide the upper and lower dies so as to make them fit when they come together. The studs C are used in all cutters made for the Ruger, New York, or Roth, McMahon & Co cracker machines.

Q. 27. Did your cutter have the base B with the feet or projection *b'* of the second claim?

A. No, sir; it had the same piece as B the shape of a bretzel, fixed stationary to the cutter to allow the punches to go through into the dough to the cutter, the upper piece acting as a clearer to clear the dough from the punch. The device used in the cutter shown in this patent is used in all ordinary cutters.

The last clase of the answer objected to as not responsive.

Q. 28. Did your cutter have the springs *b* of this second claim, or not?

Objected to, as leading.

A. No, sir; we did not use any on the machine.

Q. 29. Did your cutter have the perforated plate D, or hand piece E, of this second claim?

Same objection.

A. It had the perforated plate D, but not the hand plate E.

Q. 30. What became of this bretzel cutter made by you and Adamy;

A. It was left at Ruger's, in the upper work shop, when I left to engage in other business—which was in the year of 1876, I think.

Q. 31. Was it so placed or used during the time it was under your control, and at the time of your leaving Rugers, that the workmen or others could readily see and understand its construction and operation?

Same objection.

A. They could at the time I left, but not before as I kept it under lock and key in my experimenting room, part of it. Adamy remained, and I left it with him in the upper part of the shop. It was left on the bench so that any body could see it who went there.

Cross Examination by Mr. Baker.

X Q. 1. What do you mean by the statement in answer question 27, that "this device, used in the cutter shown in this patent, is used in all ordinary cutters"?

A. The clearers, springs and studs, are used in all ordinary cutters.

X Q. 2. Then, the only machine you and Adamy made was this machine spoken of, that was intended to be used as a model in an application for a patent?

A. Yes, sir; that was the only machine built. It was a experimental machine also; we built it heavy.

X Q. 3. When did you complete this machine?

A. In the years 1875 and 1876, or about that time.

X Q. 4. Did you ever make any bretzels with it, except the few you made by hand in experimenting with the machine?

A. No, sir.

X Q. 5. And of course it was never put in practical operation for the manufacture of bretzels for use or sale?

A. No, sir.

X Q. 6. Nor was any application made for a patent upon it, or any part of it?

A. No, sir.

X Q. 7. Do you know what became of the machine or model, spoken of, after you left Rugers in 1876?

A. I do not. I have never seen it since I left there.

X Q. 8. Then, so far as you know, the whole invention or attempted invention was abandoned about 1876?

A. It was.

X Q. 9. In your machine, the bretzel was first cut and then by a second operation formed, as I understand?

A. It was.

X Q. 10. Describe the parts of your machine used in cutting the dough, their operation.

A. The dough was run from the brake to a steel cutter composed of two plates, the dough running between them, the lower acting as a cutter and the upper as a clearer.

X Q. 11. Where was the scrap left?

A. Between the two plates, until such time as it is ready to move forward for another cutter to punch, and carried on the apron to the scrap box.

X Q. 12. Then, all the scraps were carried together,

the internal as well as the external, on the apron to the scrap box?

A. Yes, sir.

X Q. 13. In the second operation, that you call forming the bretzel, were any scraps formed?

A. There was no scraps formed in the second operation.

X Q. 14. Then, in the first or cutting operation, with your machine, there were formed and left three internal scraps in each bretzel, and the external scraps?

A. Yes.

X Q. 15. What became of the external scrap?

A. It was carried forward on the apron.

X Q. 16. What became of the internal scraps?

A. They followed the external—went with them.

X Q. 17. How could the apron deliver the dough on the face of the lower cutter, or between the two cutters or plates?

A. The dough was pressed on the apron on the brake which runs to the edge of the cutter on a level with it. The dough was drawn through onto the scrap apron before starting the first cut, and said scrap apron being also on a level with the cutter and traveling a trifle faster than the brake apron, would cause friction and carry off the dough and scrap, drawing it through.

X Q. 18. That is, you suppose it would so work, but the machine was never operated with aprons, was it?

A. I did not suppose it, I saw it done, and built the machine to do it, and put it in practical use. The bretzel machine was not operated with aprons.

X Q. 19. What other machine do you refer to?

A. I refer to the machine built for George Mugridge & Son, by J. W. Ruger & Co., known as the punch machine, and now in use at this place. It is a cracker machine, for making a seamless cracker. The same kind of a machine is also used in Chicago and other cities.

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X Q. 20. Have you ever taken out letters patent for any machine?

A. I have.

Re-direct Examination by Mr. Banning.

R-d. Q. 1. Why did not you and Adamy take out a patent on this machine?

Objected to.

A. For the want of means, and because of my going into other business, as I agreed with Smith, Dunn & Co., with whom I afterwards engaged, that I would not do anything except work on their machine, the cash recorder.

R-d Q. 2. Was your not applying for a patent because the machine was in any way impractical or imperfect in its operations?

A. It was not.

R-d. Q. 3. You speak of the machine having been built heavily; state how it was built as to strength, weight, size and capability for work.

A. The frame was made of oak timber 7/8 of an inch; the the cross-head was made of hickory, with iron bearings, 12 inches long, 9 inches wide, 12 inches high, and in all its parts made strong enough to form a small sized bretzel, such as are now in use.

R-d. Q. 4. In the words of cross question 7, you speak of the invention having been "abandoned about 1876;" was this abandonment because of inpracticability in the machine, or because it was in any way incomplete or imperfect in construction or operation?

A. It was not.

R-d. Q. 5. As a matter of fact, was or was not your invention brought to that point which fully and clearly demonstrated its practicability; in other words was it or was it not a perfected invention, capable of practical operation—at the time you left Rugers about 1876?

A. The parts of the machine were very near all done, and if I had remained a week or ten days longer would have been put together.

Re-cross Examination by Mr. Baker.

R. X Q. 1. When you say, on your re-direct examination, that your machine spoken of was built strong enough to form a small size bretzel, you mean, do you not, that it was strong enough to form such bretzel when operated by hand, and not that it was strong enough to be used in a bretzel bakery?

A. It was not strong enough to be used in a bakery.

R. X Q. 2. And, in fact, you say that this machine was never put together; how then did you form or make any bretzels with it?

A. By using the cutter and moulds by hand.

GEO. J. HILL.

It is stipulated and admitted by counsel for complainants that, if called as a witness, Adam Adamy, mentioned in the foregoing deposition, would testify the same as the witness George J. Hill has testified in the foregoing deposition.

I, James Sangster, special examiner, hereby certify, that all the proceedings aforesaid were had as stated; that I was attended by Frank Baker, Esq., and Ephraim Banning, Esq., of counsel respectively for the parties to the cause named in the caption hereto, and by the witness Geo. J. Hill, at the time and place stated; that said witness was first sworn by me to testify the truth, the whole truth, and nothing but the truth, in said cause; that his deposition, as contained in the foregoing questions and answers, was written by me in his presence, and in the presence of said counsel, and read over to him, and signed by him as and for his deposition in said

cause; and that I am not attorney or of counsel for either of said parties, or in any way interested in the result of said cause. In witness whereof I hereunto set my hand this 14th day of September, A. D. 1883.

JAMES SANGSTER.
Special Examiner.

Examiner's fees $15.
Paid by defendants solicitors.
JAMES SANGSTER.

Proofs for final hearing taken on part of defendants in the above case, before John M. Robb, notary public, at the office of S. S. Marvin & Co., Pittsburgh, Pa., the 15th day of September, 1883. Present: Frank Baker, Esq., of counsel for complainants, and Ephraim Banning, Esq., of counsel for defendants.

CORNELIUS E. RUMSEY, a witness produced, sworn and examined on part of defendants, deposes and testifies as follows, in answer to questions by Mr. Banning.

Q. 1. State your name, age, occupation and place of residence.

A. Cornelius E. Rumsey; age, 39 years; occupation, cracker manufacturer, of the firms of S. S. Marvin & Co., and Cleveland Baking Co.; residence, Pittsburgh, Pa.

Q. 2. How long have you been engaged in the manufacture of crackers, and what is the extent of your business?

A. Over 14 years. We are one of the largest concerns in the country, running seven reel ovens and seven flat ovens.

Q. 3. Is your firm engaged in the business of manufacturing crackers, cakes, etc.?

A. Yes, sir.

Q. 4. Does your firm also manufacture bretzels?

A. We do; have made them for about four years, I think—probably longer.

Q. 5. How long have you been cutting out bretzels by dies or machine?

A. Ever since the winter of 1880-1.

Q. 6. Please state when you made your bretzel cutting machines, describe their construction and manner of operating, etc.

A. The making of bretzels by hand is slow, tedious and uneven work. Taking the old fashioned cookie cutter as a starting point, we made a tin cutter in the shape and form of a bretzel, cutting the dough with it by hand. The next step was to employ and use for this purpose, a cutter used by cracker bakers when working by hand, and we had a cutter made of the same style as the tin cutter, but made with springs and clearing plates to expel the bretzel from the cutter. This involved no new principle and was only what had always been done in cracker cutters, notably so in those for letters, numerals, etc.

I cannot state exactly when this idea came to us, but the first cutter was used in the early part of March, 1881. Finding this hand cutter with springs to work well, we desired to apply it now to work on a cracker machine, and built a small model, and run it on the cracker machine, in the early part of May, 1881. From this model we made a cutter of ordinary construction for the bretzel machine; this cutter was finished and put in operation about June 7, 1881, and is still in use. Some time in the latter part of the year 1881, we attempted to improve this cutter by altering it in such a way as to have it show lines, or impressions, on the face of the bretzel, in closer imitation of hand made bretzels, which are twisted and the ends pushed down into the bow of the bretzel. This cutter did not work satisfactorily, and we have not used it except for experiments. These dates

are all fixed in my mind by our invoice book, giving bills for work done on the various cutters.

Q. 7. As I understand, you say all these cutters, except the tin one first mentioned by you, were used on the machine. Is this correct?

A. With the exception of the first two named, the tin cutter and the spring cutter, they have been so used. We used bretzel cutters on cracker machines in the early part of May, 1881.

Q. 8. Look at the specification and drawings of the Butler, Earhart & Crawford patent, No. 274,264, and state whether you understand the bretzel cutter shown and described therein.

A. I think I do. I have had a copy of the patent, as I have of all other bretzel cutter patents up to date, and have examined them all.

Q. 9. State wherein the bretzel cutters, which you have described as used by your firm, were like or unlike the bretzel cutters shown in this patent, in construction and manner of operation.

A. Taking our cutters from first to last, I see nothing in the patent spoken of that we have not used, and no principle involved that has not been in use in this country for at least 12 years. I have seen imported goods manufactured on the same principle, made before that time.

Q. 10. Wherein, if at all, does the bretzel cutter, shown in this patent, differ from ordinary cutters and devices used for making crackers, cakes, etc.?

A. I see no novelty whatever. I believed there was no novelty in our cutters, and was so well convinced of it that our firm did not apply for a patent, resting solely upon keeping the construction a secret as long as possible.

Q. 11. Have you been accustomed to take out patents for inventions made for use in your business?

A. Our firm has, and is interested in patents now.

Q. 12. As I understand, you say it has been the custom to cut dough into various shapes, such as letters of the alphabet, numerals, etc., for many years, exactly on the same principle and by the same mechanism as shown in this patent, No. 274,264. Is this correct?

A. Yes, sir.

Q. 13. From your knowledge and experience in business would you consider that anything more than the ordinary skill of an ordinary mechanic was required in making the devices shown and described in this patent, No. 274,264, similar devices being previously used for similar purposes?

A. As I have previously said in regard to the construction of our cutters, we applied no ingenuity other than that known to our grandmothers and all firms in the cracker business, applying no new principle or device. Had we believed our applications of this principle original, we certainly would have applied for a patent. We believed they were not patentable, and believe so still.

Answer objected to by complainants' counsel, as not being responsive.

Q. 14. If you have any models or bills relating to the bretzel cutters you have mentioned, please produce and identify the same.

A. The original hand cutters, made of tin, which we first used, I now produce. The spring cutter has been mislaid. The original model for our first cutter used on the machine, I also produce. I also produce bills for first tin cutters; for the hand cutter with springs and clearers; for the model, and for the cutter made after this model.

MR. BANNING. I now offer in evidence two models and four bills produced by witness, and the same are marked, defendants' exhibit No. 1, defendants' exhibit No. 2, defendants' exhibit No. 3, defendants' exhibit No. 4, defendants' exhibit No. 5, and defendants' exhibit No. 6, respectively.

Q. 15. Is this model, which I have offered in evidence as "Defendants' Exhibit No. 2," complete in every respect, or is any part wanting?

A. The center blade of the cutter is missing, also the springs.

Q. 16. In the cutters which you have described, and in this model, "Defendants' Exhibit No. 2," were there three off bearing internal scrap passages or channels?

A. There were.

Q. 17. Did you have any conversation with either of the complainants in this case before this patent was issued, in reference to bretzel cutters? If so, please state fully, when, with which one, and what was said.

A. I had a conversation with Mr. Crawford in regard to the bretzel machine, a year or more after we had used our machine. In this conversation, Mr. Crawford desired to see our machine. Feeling that the whole value of our use of this device lay in the secrecy of its use, we declined to show it. In that conversation Mr. Crawford stated that we were no doubt using a machine that infringed his patent, adding incidentally that his patent covered the cutting of dough into bretzels, whether on curved or flat surfaces. At that time no such patent was in existence, nor was it mentioned or hinted at in any patent then granted. I believed then, and I believe now, that it was said to discover how we were making our bretzels. It had been a matter of surprise to me that, selling these bretzels to so many bakers, no one had ever before suspected from their appearance that they were cut with an ordinary cracker cutter. That it was so discovered, finally, is proven by the construction of the Roth–McMahon cutters, which we never heard of until within the past four weeks. We were so fearful of cracker machine manufacturers making these cutters for other manufacturers, that our first four cutters were built in Pittsburgh, by an ordinary mechanic, under our

own supervision. To the best of my recollection, this conversation occurred more than a year ago, or about a year ago.

Answer objected to by complainants' counsel, as not being responsive.

Q. 18. How long has it been the custom to cut dough on both curved and flat surfaces, by means of dies or cutters, in the manufacture of crackers, cakes, etc.?

A. I am not old enough to tell. I think there is not a man living who saw the first cut.

Cross Examination by Mr. Baker.

X Q. 1. What department of the business of your firm have you had special charge of?

A. In Pittsburgh, when Mr. Marvin is at home, I have charge of the financial department. In our business in Cleveland, I have charge of all departments, financial and mechanical; and in Pittsburgh, in Mr. Marvin's absences, sometimes extending over six months, I have charge of all departments.

X Q. 2. Do you mean to say that, so far as your knowledge extends, the first bretzels that were cut by dies were cut by your firm as mentioned by you in your examination in chief?

A I have no recollection of any other, unless the machine for making bretzels used in Crestline, Ohio, could be called cutting by dies.

X Q. 3. Was not the bretzel machine mentioned by you in your last answer, the bretzel machine mentioned and described in the patent to Lampert and Huber, No. 184,786?

A. Probably it was; I know of only one machine in Crestline.

X Q. 4. How long have bretzels been manufactured?

A. I am not old enough to state, or Dutch enough to answer.

X Q. 5. Were you acquainted with Mr. Crawford prior to the time of your conversation about a year ago?

A. Yes, sir.

X Q. 6. Had you, or any one of your firm, seen or examined the machine manufactured under the Lampert and Huber patent, and used by the complainants in this case, before this conversation with Mr. Crawford?

A. I think I had.

X Q. 7. When and where?

A. I think I had seen it in the month of November, 1882, at Columbus, Ohio.

X Q. 8. Is it not true that your machine has been kept at work as secretly as possible up to this time?

A. It is true.

X Q. 9. Whom have you permitted to see it?

A. No one whom we could prevent seeing it.

X Q. 10. Describe the precautions used to prevent persons from seeing it.

A. No extraordinary precautions; any one in our employ could have seen it.

X Q. 11. Did you not refuse to let your traveling salesman see it in use?

A. Not to my knowledge.

X Q. 12. Was your firm engaged in the manufacture of bretzels by hand prior to their manufacture by machine, as stated by you? If so, for how long and to what extent?

A. We were manufacturing bretzels by hand, for our own trade, and to supply other bakers, before we made them by machine—since 1878–9.

X Q. 13. Will you produce and have attached to your deposition samples of bretzels cut with your machine, both baked and before baking?

A. Yes, we will produce them, and mark them.

X Q. 14. How did the spring hand cutter, mentioned by you in your examination in chief, differ from the tin hand cutter, "Defendants' Exhibit No. 1"?

A. Simply in the use of the spring and clearer to expel the dough.

X Q. 15. Then the shape of the cutter and the shape and form of the bretzel made by the spring cutter was precisely like that made by the cutter, "Defendants' Exhibit, No. 1?"

A. Yes, sir.

X Q. 16. The bretzel cutters then that are now in use by your firm are made after the model, "Defendants' Exhibit No. 2?"

A. Yes, sir; the same as the cutter we used in May, 1881, and ever since.

Re-direct Examination by Mr. Banning.

R-d. Q. 1. What can you state as to your making or using dies, or cutters, having the particular creasers and twisters mentioned in this patent, No. 274, 264?

A. In the latter part of February, 1882, we completed a cutter, similar in general construction and work to "Defendants' Exhibit No. 2," but with the addition of dies to crease the dough in the middle of the bretzel, where the arms are supposed to cross and where the ends are supposed to lap on the bow of the bretzel. By refering to our accounts, not now at hand, I can place the plan for the cutter at an earlier date; some months before February, 1882. Our books show that this cutter was complete February, 1882. This cutter did not work as well as the previous one and has never been used except for experiment. We have the cutter now in our factory; some of the parts are missing but no doubt could be found. This cutter was provided with the creasers, as defined in

the patent No. 274,264, as "center creaser a^6, side creasers a^5 and a^5, end creasers a^7 and a^7," projecting into the bow a, substantially as shown and described.

R-d. Q. 2. How long has it been the custom to crease the dough by dies or cutters in the manufacture of crackers, cakes, etc.?

A. We have used such cutters for about 12 years, and I have seen goods creased with cutters, made by other bakers at an earlier date.

Re-cross Examination by Mr. Baker.

R. X Q. 17. Who in your shop, if any one, worked upon the cutter mentioned by you in your re-direct examination; I mean in getting up the cutter?

A. Mr. Krebs, probably; that is, we had a man here with him, but Mr. Krebs probably did the work.

R. X Q. 18. Who made it?

A. I do not know that I am obliged to answer that. If there should be any liability we would wish to assume it, and not involve the party who made the cutter. It was built after drawings furnished by myself or Mr. Marvin and under the direction of one of us.

R. X Q. 19. Do you, then, refuse to state where, or by whom, this cutter was made?

A. I do; without consulting Mr. Marvin.

R. X Q. 20. Why did you not, during your examination in chief, or in your cross examination mention or refer to this cutter?

A. To tell the exact truth, I did not then consider it important; but on picking up Mr. Banning's copy of Mr. Crawford's deposition, which lay on my desk, I read a few words which showed me this cutter might have an important bearing on the patent.

R X Q. 21. Will you now produce the cutter for inspection?

A. Yes, sir, I will; and now produce it.

R X Q. 22. What was done with the cutter now mentioned after it was constructed?

A. As soon as we got the cutter, we put it on the machine and cut bretzels with it. If I have not forgotten, we broke it before we worked it two hours and sent it to be repaired. The idea was perfect, but the mechanical construction of the cutter seemed to be faulty.

R. X Q. 23. When did you remove the creasers?

A. I can't remember.

R. X Q. 24. Who in your shop has had charge of this cutter since its coustruction?

A. Mr. Krebs.

CORNELIUS E. RUMSEY.

MR. BANNING. I now offer in evidence one of the cups and creasers from the cutter referred to by witness in his redirect and re-cross examination, and the same is marked "Defendants' Exhibit No. 7." Also samples of raw product of "Defendants' Exhibit No. 2", marked "Defendants' Exhibit No. 8". Also, samples of baked product of "Defendants' Exhibit No. 2", marked "Defendants' Exhibit No. 9"; also samples of raw product of "Defendants' Exhibit No. 7", marked "Defendants' Exhibit No. 10"; also samples of baked product of "Defendants' Exhibit No. 7", marked "Defendants' Exhibit No. 11".

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(DEFENDANTS' EXHIBIT, No. 3.)

E. W. DEMLER,
F. E. SCHENCK. PITTSBURGH, PA., Feb. 21, 1881.

MESS. S. S. MARVIN & CO.,

TO DEMMLER & SCHENCK, DR.,

Stoves and housefurnishing goods, tin and copper ware, refrigerators, water coolers, ice cream freezers, bird cages, fire irons, coal vases, fenders, &c.

Nos. 198 and 200 Liberty Street.

	1 Tin Pretzel Cutter,		50
Feb. 24,	1 " do.	do.	50
			1 00

(DEFENDANTS' EXHIBIT, No. 4.)

E. W. DEMMLER,
F. E. SCHENCK, PITTSBURGH, PA., Mar. 1, 1881.

MESS. S. S. MARVIN & CO.,

TO DEMMLER & SCHENCK, DR.,

Stoves and housefurnishing goods, tin and copper ware, refrigerators, water coolers, ice cream freezers, bird cages, fire irons, coal vases, fenders, &c.,

Nos. 198 and 200 Liberty Street.

1	Pretzel Cutter with spring,	1.75

(DEFENDANTS' EXHIBIT, No. 5.)

Shafting, pulleys, hangers, &c.

PITTSBURGH, PA., May 13, 1881.

S. S. MARVIN & CO.,

TO J. C. REITHMULLER & SON, DR.,

General machinists and blacksmiths; manufacturers of railings, iron doors, gearing, &c., also tools of every description. Special attention given to grinding knives and scissors. Repairing of every description executed with neatness and dispatch,

Cor. Strawberry and Cherry Alleys.

1 Brass Bretzel Cutter with one cup for model,	$13.00

(DEFENDANTS' EXHIBIT, No. 6.)

Shafting, pulleys, hangers, &c.

PITTSBURG, PA., June 7, 1881.

S. S. MARVIN & CO.,

TO J. C. REITHMULLER & SON, DR.

General machinists and blacksmiths; manufacturers of railings, iron doors, gearing, &c., also tools of every description. Special attention given to grinding knives and scissors. Repairing of every description executed with neatness and dispatch,

Cor. Strawberry and Cherry Alleys.

1 Bretzel cutter with 6 cups and clearers	$78.35

WILLIAM B. KREBS, a witness produced, sworn and examined on part of defendants, deposes and testifies as follows, in answer to questions by Mr. Banning.

Q. 1. State your name, age, occupation and place of residence.

A. Wm. B. Krebs; age, fifty-five years; occupation, engineer and machinist; in the employ of S. S. Marvin & Co.; residence, Allegheny city, Pa.

Q. 2. Do you know anything about the manufacture and use of bretzel cutters by S. S. Marvin & Co?

A. I do; I fitted their first bretzel cutter up myself.

Q. 3. State fully what you have had to do with the making of bretzel cutters for their use, and under whose direction.

A. Under the direction of Mr. Marvin I had the tin cutter, "Defendants' Exhibit No. 1." made in Febuary 1881. The next was the spring cutter which I had made to order and which we used March 1st., 1881. The next was a cutter for which we had castings made, but which were thrown out. I think we had patterns made of one like "Defendants' Exhibit No. 2," May 13, 1881.

Q. 4. You say this model for the machine was made May 13, 1881?

A. Yes, sir; finished ready for use at that time.

Q. 5. Has the machine last referred to been in constant use since it was made—May 13, 1881?

A. We have used it off and on, when we needed it, from that time to this.

Q. 6. What did you have to do, personally, with the making or use of this cutter?

A. In the manufacture of this cutter I superintended the work. It was made by the firm of Reuthmuller & Son, of Pittsburgh.

Q. 7. Do you know personally of their use according to this construction, after May, 1881?

A. Yes, sir.

Q. 8. How long has it been the custom to cut cake, crackers, etc., by means of cutters or dies, into various shapes, particularly into letters, numerals, etc., so far as you know?

A. I should feel inside of the mark by saying five years at least.

Q. 9. Are the cutters used for cakes, crackers, etc., constructed and arranged to operate in the same way as the bretzel cutter used by S. S. Marvin & Co., above referred to?

A. Some are, and some are not.

Q. 10. As to those which are so constructed, is there any difference between their construction and manner of operation, and the construction and manner of operation of bretzel cutters, further than the difference in the shape or form of the product?

A. That is all the difference; simply the shape.

Q. 11. When this bretzel cutter was first made was it considered as being anything new, or as operating on the same principle as the devices previously used for the same purpose?

A. This is the first I ever knew of for making bretzels.

Q. 12. But was it considered as operating on the same principle as the devices used for making cakes, crackers, etc.?

Question objected to by complainants' counsel.

A. The principle in the cutter is the same as in some of them. It has what we call a scrap clearer, which takes up the scraps, or at least a part of them.

Q. 13. Do you know of any other cutters which take up the scraps in the same way as this bretzel cutter?

A. Yes, sir; I do.

Q. 14. How long have you known of the use of such cutters as the last referred to?

A. I suppose fifteen years.

Cross Examination by Mr. Baker.

X Q. 1. Since these cutters were adopted and put in operation in the bakery of S. S. Marvin & Co., has the manufacture of beetzels by hand in that bakery ceased?

A. It has.

X Q. 2. What advantage is there in using this machine over the making of bretzels by hand?

A. We can do more work.

X Q. 3. How long have you been acquainted with the manufacture of bretzels?

A. I never saw them made until about a year before this cutter was made.

X Q. 4. At whose instance did you construct or work upon this machine?

A. At the instance of S. S. Marvin.

X Q. 5. You state that previous to the making of this machine, according to "Defendants' Exhibit No. 2," you had castings made for a cutter which was thrown aside?

A. Yes, sir. It would work, but would not give the shape we wanted.

X Q. 6. What shape or form did you want to get, or was you striving to secure, in this cutter?

A. We simply wanted to get a shape that would look well for a bretzel.

X Q. 7. And you failed to get it?

A. The first time; in the model, "Defendants' Exhibit No. 2," we got it.

X Q. 8. In what did the machine which you say was rejected, differ from this one, "Defendants' Exhibit No. 2?"

A. Some of the parts were a little thicker than we wanted.

X Q. 9. Do you know where this model is?

A. No, sir. I think it was thrown away among the scraps.

X Q. 10. Since the machine, or cutter, made after this model, "Defendants' Exhibit No. 2," was made, have you or has any one in the bakery or establishment of S. S. Marvin & Co. made any attempt to change or improve upon this cutter?

Question objected to by defendants' counsel as immaterial and as inquiring into S. S. Marvin & Co.'s private business.

A. No, sir.

X Q. 11. Mr. Krebs, in whose charge has this bretzel cutter, "Defendants' Exhibit No. 7," been, since its construction?

A. It has been in my care.

X Q. 12. Did you try to operate this cutter?

A. I did: yes, sir.

X Q. 13. What was the result?

A. Not satisfactory at first, by any means.

X Q. 14. What was the trouble?

A. It clogged.

X Q. 15. What did you do to obviate this trouble?

A. Took the center pieces out.

X Q. 16. Did you not take the end pieces out also?

A. Yes, sir.

X Q. 17. By the center and end pieces you mean the little pieces that are called creasers which are fastened on the upper side by a screw; do you not?

A. Yes, sir.

X Q. 18. Then, after the creasers were taken out did not the cutter work?

A. It worked much better than at first.

W. B. KREBS.

I, John M. Robb, a notary public, in and for the county of Allegheny, state of Pennsylvania, hereby certify that all the proceedings aforesaid we had as stated; that at the time and place stated in the caption, I was attended by Frank Baker, Esq., and Ephraim Banning, Esq., of counsel respectively for the parties named in said caption. and by the witnesses Cornelius E. Rumsey and Wm. B. Krebs; that said witnesses were first sworn by me to testify the truth, the whole truth, and nothing but the truth, in the case named in said caption; that their depositions, as contained in the foregoing questions and answers, were reduced to writing, in short hand, in their presence, and afterwards written out and signed as their depositions in said cause; that I am not attorney or of counsel for either of said parties, or in any way interested in the result of said cause.

In witness whereof I have hereto set my hand and seal this 20th day of September, 1883.

[SEAL] JOHN M. ROBB,
Notary Public.

Proofs for final hearing taken on the part of the defendants in the above cause, before Charles C. Linthicum, notary public, at the office of Messrs. Banning & Banning, Chicago, Illinois, commencing on Tuesday, the 2d day of October, 1883, at ten o'clock a. m.

Present—Ephraim Banning, Esq., of counsel for defendants, and Frank Baker, Esq., of counsel for complainants.

JACOB ROTH, a witness produced, sworn and examined on the part of the defendants, deposes and testifies as follows, in answer to questions by Mr. Banning:

Q. 1. State your name, age, occupation and place of residence.

A. Jacob Roth; forty-two years; machinist; Chicago, Ill.

Q. 2. What is your firm name, what particular line of machinery are you manufacturing, how long have you been manufacturing the same, and, in a general way, what is the extent of your business?

A. Roth, McMahon & Co. We manufacture cracker machinery and bakers' tools of every description; we manufacture nothing but baking machinery. Our present firm have been manufacturing such machinery since 1873, but I first went to work at this business in the year 1859, for J. W. Ruger & Co.; and I have been working at it ever since, except four years while I was in the navy during the war. Our business runs from one hundred and twenty-five to one hundred and fifty thousand dollars a year, and we are considered large manufacturers.

Q. 3. Do you know what bretzels are?

A. Yes, sir, I do; and have known as far back as I can remember.

Q. 4. Are you familiar with the way in which they are manufactured?

A. Yes, sir. They were made by hand as far as I can remember back. The first bretzel cutter I saw was in Buffalo—that was part of one. I saw it in 1875. The first bretzels I saw manufactured by machinery was in Columbus, Ohio, I should think about three years ago.

Q. 4. State how long you have known of the use of machinery for cutting cakes, crackers, etc., into various shapes, and describe some of them.

A. Ever since 1859. Such machines are so numerous that it would take a week for me to describe them. In a general way, they are made so that the die will cut down on to a flat sheet of dough and cut out the shape of the cracker. It will also leave impressions according to the different styles of crackers—any form or shape desired.

Q. 5. Are you familiar with the Butler, Earhart & Crawford patent No. 274,264, sued on in this cause?

A. I have seen this patent, and I understand it.

Q. 6. State what differences there are between the machines used for cutting cakes, crackers, etc., for many years past, and the bretzel cutting machine shown and described in this patent No. 274,264.

A. They are the same thing as a cutter, except in the shape, and the shape we have made just about the same. I should not consider this Butler, Earhart & Crawford machine anything different from cutters of the general style I have been making since, say, 1866.

Q. 7. Were the cutters you made long before the date of this patent—"since, say, 1866"—provided with internal scrap passages or channels for carrying off or removing the scrap dough?

A. Yes; some were made that way and others were not.

Q. 8. Were they provided with means for creasing and twisting the dough, or not?

Objected to, as leading.

A. Some cutters we made have impressions showing creases representing a twist. These were made at least ten years ago.

Q. 9. Then, how long have you known, personally, of the use of internal scrap passages and creases in machines for cutting crackers, cakes, etc.?

A. As to the scrap passages, they were in use when I first went into the trade in 1859. I mean internal scrap passages for carrying the scrap up through the cutter. As to the impressions showing the form of a twist, I should go back ten years at least.

Q. 10. If you have any catalogues showing cuts of various forms or shapes into which dough has been cut by dies or cutters operated by machinery, please produce and identify them.

A. I produce two catalogues—one of J. W. Ruger & Co., which has been in my possession ten years, and one of our own firm, which was issued and circulated about four years and six months ago. As to twists in dough, I call attention to cuts Nos. 4 and 7, on page 49 of the Ruger catalogue, and Nos. 4 and 7, on page 43 of our catalogue. I have marked these cuts ten and four years old respectively, from the time Ruger's catalogue has been in my possession, and from the date of ours; but as to ours, the die for cutting these twists was manufactured at least several months before the catalogue was issued, and as to those shown in Ruger's catalogue, they were manufactured while I was with him, which was before 1873.

Q. 11. Are the bretzels cut by machinery, any better in quality than those previously made by hand, or is there any difference between them as to quality?

A. I do not think that a machine made bretzel is as good as a hand made bretzel; and bakers tell me that they are not so good.

Q. 12. How long have clearers, or "expelling studs," been used in cutters for cakes, crackers, etc.?

A. Clearers or expelling studs have been used ever since I have been at the business, and I do not know how long before. Cutters will not work successfully without them.

Q. 13. In what respects, if any, were the clearers or expelling studs used in such cutters, say ten or fifteen years ago, different in construction or operation from the clearers, or expelling studs shown and described in this patent, No. 274,264?

A. I can see no difference. In fact, there are no two cutters that have expelling studs exactly alike; we make the expelling studs to correspond to the cutter.

Q. 14. If you have any old dies or cutters with you, please produce and identify them?

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A. I here produce two dies; one for cutting crackers and cakes into the shape of the letter B, and the other for cutting them into the shape of the character &. Both of these have been used to my knowledge since about 1866 or 1867—I think that far back; and I know they were made and in general use in 1870. Dies on this principle were made in many other shapes as far back as these.

Q. 15. Can you state, in a general way, the different shapes into which cakes, crackers, etc., have been cut by dies operating on the same principle as these two which you have produced, for, say, the last fifteen or twenty years?

A. The different letters of the alphabet; different kinds of animals and birds; different nationalities of human beings; and rounds, ovals, half-rounds, squares, diamonds and other shapes too numerous to mention.

Q. 16. From your knowledge and experience in this kind of machinery, and in view of what previously existed, would you consider that anything more than the ordinary skill of an ordinary mechanic was required in the making of the bretzel cutter described and shown in this patent, No. 274,264?

A. I don't think it would require anything more than an ordinary mechanic, because we put ordinary mechanics at it.

Q. 17. Did you know of the Butler, Earhart & Crawford cutter, shown in this patent, No. 274,264, before making the bretzel cutter used by the defendants in this cause, and claimed to be an infringement of said patent?

A. Mr. Crawford had told me that he had a patent, or was applying for a patent; but I had never seen it. The defendant's cutter was commenced about January 8, 1883, and finished on February 8, 1883.

Q. 18. Was the defendant's cutter, referred to, made from any description given by Mr. Crawford, or from your general knowledge and skill in the manufacture of other

cutters; such for instance, as those used for cakes, and crackers?

A. Steckel brought a die or cup to us, and we made a new cutter on the general principle on which cracker cutters are made. We could not use his die; but made an entirely new cutter, only following his as to the shape of the bretzel.

MR. BANNING.—I now offer in evidence the two pamphlets and the two cake or cracker cutters produced and identified by the witness; and the same are marked, Defendant's Exhibits, Nos. 12 to 15 inclusive.

For the purpose of showing the state of the art, I also offer in evidence letters patent of the United States, Nos. 184,786 and 224,446, each granted to Lambert and Huber, the former, November 28, 1876 and the latter, February 10, 1880.

Cross Examination by Mr. Baker.

X Q. 1. Are you interested in the result of this suit?

A. No, sir; except that as a manufacturer I want to stand by my customers.

X Q. 2. Is it not true that, upon the filing of this bill, you assumed the burthen of the defense of this suit?

A. I don't understand it that way. That is a question I could not answer until I go to the office and find out about it.

X Q. 3. Is it not true that the firm of Roth, McMahon & Co., or some one of the firm, have retained counsel in this cause, to defend this suit?

A. The arrangement was not made by myself; but, as I understand it, we are to advance the money to defend this suit, and there is an understanding that the defendants are to repay us.

X Q. 4. Where in Buffalo, in 1875, did you see any

part of a machine that you understood, or was informed, was to be a bretzel cutter?

A. In the cutter room of J. W. Ruger's factory.

X Q. 5. Did you understand, or was you informed, by whom said machine had been built or constructed?

A. Not at the time that I saw the cutter?

X Q. 6. Were you at any time afterwards?

A. I was.

X Q. 7. Who was the person or persons who built this machine?

A. At the time that I saw the cutter Charley Waldo was working on it.

X. Q. 8. Did you not understand, or were you not informed, that George J. Hill was or had been also working on the cutter?

A. Not that same day, but I was so informed some time after.

X Q. 9. Was the cutter in operation when you saw it?

A. No, sir.

X Q. 10. Was it ever finished or completed to your knowledge?

A. I cannot say; I don't know.

X Q. 11. Why can't you say?

A. I have not seen it finished.

X Q. 12. You never saw a bretzel made on it or with it, did you?

A. I have not.

X Q. 13. And you never saw a bretzel that had been made on it or with it?

A. I have not.

X Q. 14. How did you come to see this machine or cutter?

A. I was in the factory.

X Q. 15. Was Waldo working on it at the time you saw it?

A. Yes, sir.

X Q. 16. Did he ask you to look at it?

A. He drew my attention to it.

X Q. 17. Where in Columbus did you see a bretzel machine?

A. At Butler, Earhart & Co.'s, the complainants in this case.

X Q. 18. When and where was it that you first saw a bretzel made by machinery?

A. At Butler, Earhart & Co.'s; about three years ago, as near as I can get at it.

X Q. 19. Is it not true that before that time there had been several attempts to construct a machine for making bretzels?

A. I had not seen any.

X Q. 20. Had you not heard of them?

A. I heard something about a Philadelphia machine, and I think Keubler and J. W. Ruger was interested in it.

X Q. 21. Did you not have a photograph of this machine, or some Pennsylvania machine, and show it to Mr. Crawford?

A. Not to my present knowledge.

X Q. 22. Then, except the bretzels made at Columbus by the complainants, as you have stated, when and where did you next see bretzels made or cut by machinery?

A. I believe that the next place that I saw was at the Dozier Weil Cracker Co.'s, at St. Louis.

X Q. 23. The machine that you saw there was also the Lambert and Huber machine, was it not?

A. It was about the same as the machine that Butler, Earhart & Co. were using.

X Q. 24. When did you see that machine?

A. Sometime in the summer of 1882, I think.

X Q. 25. When and where did you next see bretzels cut by machinery?

A. The next I saw on that cutter that we made for Steckel.

X Q. 26. Is it not true that the Steckels brought you a cutter that they had made, or had had made, and had used?

A.—They brought us a cup, not a cutter—simply one cup.

X Q. 27. What do you mean by a cup?

A. A part of a cutter.

X Q. 28. What part of a cutter?

A. The cutting part.

X Q. 29. And a cutter may consist of one or more cups; is that so?

A. Yes.

X Q. 30. Looking at the cutter, complainants' exhibit A, state what part you call the cup.

A. The brass cutting part, not including the plungers or clearers.

X Q. 31. Then the Steckels brought you a cup substantially like the cup in complainants' exhibit A, did they?

A. No, sir; it was not like that.

X Q. 32. Describe the cup the Steckels brought you as compared with the cup in complainants' exhibit A, stating wherein the two are alike, or similar, or wherein different.

A. The Steckel cup was solid, and engraved out to form the bretzel. The difference between the Steckel cup and this cup is that this one is cast so as to leave openings for clearers.

X Q. 33. Is it not true that, aside from the plungers or clearers, the cup in exhibit A is like, in form and shape, the cup that the Steckels brought you?

A. Yes, sir.

X Q. 34. Is it not true that immediately after doing

this work for Steckels your firm began to make bretzel cutters?

A. Yes, sir.

X Q. 35. Like the cutter, exhibit A?

A. Yes, sir.

X Q. 36. And continued to make such cutters, from that time to this?

A. Yes, sir.

X Q. 37. And was the bretzel cutters made for the Steckels, as you have stated, the first bretzel cutter made by your firm?

A. It was.

X Q. 38. How many bretzels cutters have your firm made?

A. I think four.

X Q. 39. For whom, and where are they?

A. I don't know. I know that Steckel's got one, and for the others you would have to go to the books.

X Q. 40. In the cracker cutters showing or made to represent twists, is it not true that such effect was produced by engraving spiral lines in a flat surface on the face of the die?

A. No, sir.

X Q. 41. Look at the borders in exhibits 12 and 13 to which you have called special attention, and state how those dies were constructed.

A. They were set from $\frac{3}{32}$ to $\frac{1}{8}$ of an inch above the edge of the cup. Some are solid and engraved out; others are set in in pieces.

X Q. 42. Then, upon the face of the die, these spiral lines that you wish to have remain were marked, or traced, and the metal cut away from them $\frac{3}{32}$ to $\frac{1}{8}$ of an inch?

A. Yes, sir; or deeper if necesary.

X Q. 43. And the twisting mentioned by you in your

deposition is the twisting shown in cuts 4 and 7 of page 43 of your catalogue, exhibit 13?

A. Those are two of the cuts, but we do not limit ourselves to any particular styles of twist.

X Q. 44. But they were all made in substantially the same manner, were they not?

A. Yes, sir; except that we locate them in different parts of the cutter.

X Q. 45. Is it not true that the bretzel machines that you saw at Columbus and St. Louis, as you have stated, were built substantially in accordance with the patents No. 184,786 and No. 224,446, offered in evidence by defendants?

A. Yes, so far as I can see.

X Q. 46. Do you know whether or not the bretzel cutter that you saw Waldo working on at Buffalo was finished?

A. It was not finished when I saw it.

X Q. 47. Was it ever finished?

A. I don't know.

X Q. 48. In what respects are the hand made bretzels better than the machine made?

A. The machine made bretzel is liable to split, and in my judgment I don't think the flavor is as good.

X Q. 49. What is the difference between the cost of manufacture of the two, if you know?

A. I don't know.

X Q. 50. Whose machine made bretzels have you tasted?

A. I have tasted the Dozier Weils Cracker Company's, and Steckel Bros.

X Q. 51. Do you consider hand made crackers better than machine made?

A. I don't know.

Re-direct Examination by Mr. Banning.

R-d. Q. 1. Are the borders shown in these exhibits Nos. 12 and 13 formed in any different way from the borders of other cakes and crackers cut out by dies?

A. Some are made coarse and some fine, some are solid with the cup and others are set in in pieces. But with these exceptions and excepting differences in the shape they are all made in the same way.

JACOB ROTH.

Adjourned to Wednesday, October 3, 1883, at ten o'clock A. M. Wednesday, October 3, 1883. Met pursuant to ajournment; present as before.

CALEB H. MARSHALL, a witness produced, sworn and examined on the part of the defendants, deposes and testifies as follows, in answer to questions by Mr. Banning:

Q. 1. State your name, age, occupation and place of residence?

A. Caleb H. Marshall, 43 years, treasurer of the F. A. Kennedy Biscuit Company, Chicago, Illinois.

Q. 2. What experience have you had in the bakery business?

A. I have been connected with it for about 13 years, and although not a practical baker, am familiar with it generally.

Q. 3. Do you know what a bretzel is?

A. Yes, sir.

Q. 4. Are you familiar with them as manufactured both by hand and by machinery?

A. I know that they are made in different ways both by machinery and by hand, and I have eaten them as made both by machinery and by hand.

Q. 5. Is there any difference in quality between hand made and machine made bretzels, if so please state it?

A. I think there is a difference. I think the hand made bretzels such as we have are the best. Since I have been connected with the company, we have never handled any machine made bretzels; we have had a great many samples, but the previous manager, that had charge before I was there, had some, I think, and they did not seem to suit as well as the hand made, and since then we have never had any of the machine made bretzels.

Q. 6. Is there any objection to hand made bretzels because of the roughness or unfinished appearance of the dough?

A. We have never had any objection that I know of.

Q. 7. Are you familiar with the different shapes in which crackers are cut by machinery—that is, by dies or cutters?

A. I know that they are cut by cutters in different shapes—a great many different shapes and styles—such as letters of the alphabet, figures, leaves, animals, birds, etc.

Q. 8. How long has it been customary to cut crackers by machinery in the different shapes named in your last answer?

A. Ever since my connection with the business, certainly; I don't know how long before.

Cross Examination by Mr. Baker.

X Q. 1. Then you have never handled or sold machine made bretzels?

A. No, sir.

X Q. 2. And you have never seen a bretzel made by machinery.

A. I have never seen the machine in operation. I have seen sample bretzels that were said to have been made by machinery.

X Q. 3. You are not a practical baker?

A. No, sir.

X Q. 4. Wherein do you say the hand made bretzels are superior to the machine made?

A. The customers claim that the hand made are the best flavor and sell the best and give the best satisfaction, and that is the reason we don't take hold of the machine made bretzels. Still I think it would be very difficult for me to tell the difference. Some people might.

X Q. 5. I am not asking for the opinion of your customers but for your own. Wherein have you, or do you find the hand made superior to the machine made bretzels?

A. In flavor.

X Q. 6. By whom were the hand made, and by whom the machine bretzels made, that you tried or tested?

A. Well, the hand made were made by Swartz, Chicago; Keubler, Mueller & Co., Philadelphia. The machine made by Butler, Earhart & Co., Columbus; S. S. Marvin & Co., Pittsburg; Dozier Weil Cracker Company, St. Louis.

X Q. 7. Did you notice any difference in the flavor of the hand made bretzels?

A. No; I could not say that I did.

X Q. 8. The Swartz bretzel and the Philadelphia bretzel of Keubler, Mueller & Co., tasted to you precisely alike?

A. Nearly; the Philadelphia bretzel is the best.

X. Q. 9. Do not the Philadelphia bretzels bring much more in the market than the Swartz bretzels?

A. We get a little more for them; one or two cents a pound; I don't know how it is in the general market.

X Q. 10. Do you notice any difference in the machine made bretzels?

A. No, not particularly.

X Q. 11. You found them to be of the same quality, color, shape and flavor, did you?

A. Yes, sir, nearly so; I was not able to distinguish any difference. I would say that from the first samples that we

got, up to the last, there has been an improvement in them.

X Q. 12. Do not you think that the flavor would depend upon the stock used and the way in which ths bretzel was treated after it was cut or formed, rather than upon the question whether it was rolled out by hand or cut with a cutter or die or molded by machinery?

A. Well, it does. It depends a good deal how it is baked after it is formed. Baking and stock has all to do with it as far as the result of the goods is concerned. That is true of all bakery goods.

X Q. 13. Who are the manufacturers of machine make bretzels in this country?

A. All those that we have had samples from are Butler, Earhart & Co., Columbus, Ohio; S. S. Marvin & Co., Pittsburg, Penn.; Dozier Weil Cracker Company. St. Louis, Mo.

X Q. 14. What do you say as to the standing in the trade, of the firms you have named, their experience and amount of business.

A. All of them stand well. They are old firms and all doing a good business as far as I know.

X Q. 15. What would you say as to the standing and experience in the bakery business of the California Cracker Company and Walter G. Wilson, Philadelphia?

A. They stand well and are old firms.

CALEB H. MARSHALL.

E. NELSON BLAKE, a witness produced, sworn and examined on the part of the defendants, deposes and testifies as follows, in answer to questions by Mr. Banning:

Q. 1. State your name, age, occupation and place of residence?

A. E. Nelson Blake, 52 years, baker—Blake, Shaw & Company,—Dake Bakery, Chicago, Illinois.

Q. 2. How long have you been in the bakery business?

A. Fourteen years.

Q. 3. Do you know what a bretzel is?

A. I do. We do not manufacture them, but handle them, selling those manufactured by others.

Q. 4. Are you acquainted with them as manufactured both by hand and by machinery?

A. I am.

Q. 5. In your judgment, which is the better, the hand made or the machine made bretzel?

A. The hand made.

Q. 6. How are the two kinds regarded by the trade generally, so far as you know?

A. I can only say so far as our customers are concerned, to whom we have sold both kinds, they much prefer the hand made, at two cents a pound difference in the price—that is, the hand made are sold for two cents a pound more than the other, and we sell twenty of the hand made to one of the machine made.

Cross Examinatton by Mr. Baker.

X Q. 1. How long have bretzels been in use and recognized by the trade as a standard article of trade?

A. I cannot say.

X Q. 2. Has it been ever since your connection with the bakery business?

A. We have not sold them more than six years.

X Q. 3. Then, as far as you know, bretzels have not been in use more than six years?

A. I did not say that. If you read the question, you will see.

X Q. 4. How long have you known or heard of bretzels?

A. I will say twenty-five years.

X Q. 5. Do you mean to say that up to six years ago bretzels were not recognized or handled by the trade, or

only that your firm did not handle them up to six years ago?

A. They were not considered a standard article in the cracker trade over six years ago in this locality. I do not know how it was elsewhere.

X Q. 6. Is it not a fact that much more than six years ago bretzels manufactured in Pennsylvania were shipped to this market and sold by grocers in this city?

A. That I do not know.

X Q. 7. Do you say that prior to six years ago bretzels were not manufactured and sold in the city of Chicago?

A. I do not say so.

X Q. 8. For how many years have bretzels been handled and sold in the city of Chicago?

A. That I do not know. There is a difference, in my judgment, between an article casually sold and a standard article of trade, the same as there is between staple groceries and fancy groceries.

X Q. 9. When did you first hear of or see machine made bretzels?

A. I cannot fix the time. The first I ever saw I think were sent us by Messrs. Butler, Earhart & Co., Columbus, Ohio.

X Q. 10. Whose machine made bretzels have your firm handled or sold?

A. We have handled some of S. S. Marvin & Co.'s, Butler, Earhart & Co.'s, and I have received samples from the Dozier Weil Cracker Co., St. Louis.

X Q. 11. Whose hand made bretzels have you handled and sold?

A. A man by the name of Swartz, in this city, and one other firm—I forget the name—who were in business here for a short time.

X Q. 12. Have you examined other hand made bretzels?

A. I never have.

X Q. 13. Do you consider yourself a competent judge of bretzels?

A. As an article of trade, yes; but I would not call myself an expert on flavor, as to what a bretzel should be.

X Q. 14. In what respect did you say that the hand made is superior to the machine made bretzel?

A. In the line of trade, one principal point is their carrying quality; the hand made in transporting do not break up so badly as the machine made. Then the texture of the goods is altogether different.

X Q. 15. How do you account for that?

A. In the necessary condition of the dough required to work on the machine as compared with the dough worked by hand.

X Q. 16. Do you consider a hand made cracker superior to the machine made?

A. Yes, sir. Bent's hand made water crackers will sell for twenty-five cents a pound, while a machine made cracker from the same stock would not bring over ten.

X Q. 17. Is there not a difference in price of hand made bretzels made by different bakeries?

A. That I cannot say, as we have handled only one manufacturer's.

X Q. 18. Do you not know, as a matter of information in the trade, that the Philadelphia hand made bretzels bring higher prices than the Chicago hand-made bretzels?

A I do not, as we have never handled them. I would say that the Middle States Association's list of prices on all kinds of goods is higher than the Western States Association.

X Q. 19. Then your knowledge of hand made bretzels is confined to the bretzels that have been handled and sold by your firm, is it?

A. It is.

X Q. 20. Describe the process of making bretzels by hand.

A. I can not, because I do not know.

X Q. 21. Do you know the processes the bretzel goes through after it is molded or formed in the dough?

A. I do not.

X Q. 22. How, then, do you know that the dough must be so far different for a hand made bretzel from that of a machine made bretzel as to make the hand made bretzels superior to the machine made bretzels?

A. I said that the dough of the hand made was different from the dough of the machine made. This I judge, as I do of our own crackers, by the appearance of the goods when manufactured; for instance, I can take a soda cracker or a butter cracker after it is baked and state whether the dough was too soft or too stiff at the time of baking. So do I judge by the appearance of the two bretzels.

X Q. 23. Do you say that the machine made bretzel was made from dough too hard or too soft?

A. In my judgment, it is made from a stiffer dough than a hand made bretzel. I never saw either manufactured.

X Q. 24. Do you know whether or not soft dough as well as hard can be used for machine made bretzels?

A. I do not know; but judging by the appearance of the manufactured article, I say that a much stiffer dough is required for the machine made than the hand made.

X Q. 25. Do you not, in making crackers, use stiff dough for hard crackers and softer dough for soft crackers?

A. No, sir; not necessarily.

X Q. 26. Do you not cut on your cracker machines soft dough?

A. For some kinds of goods, yes; but with some cutters we could not.

X Q. 27. Is it not true that the quality and market value of bretzels depend in great part upon the stock used

and skill in manufacturing, as well as upon the question whether they are hand made or machine made?

A. Undoubtedly that is true; but in my opinion the same stock and skill will make a better bretzel by hand than by machine.

X Q. 28. But you have never seen a bretzel made, either by hand or by machine?

A. Never. I only judge by the appearance of the two kinds.

X Q. 29. Have you noticed any difference in the machine made bretzels that you have seen made by different bakers?

A. I have; some are better than others.

X Q. 30. Are you a practical baker?

A. I am not, in the sense that I do not work at the troughs mixing, and have never done so.

X Q. 31. What department of the business is under your control?

A. Buying the flour and preparing the mixtures. I have been in my present business fourteen years, and before that I was in the flour business eleven years.

E. NELSON BLAKE.

STATE OF ILLINOIS, }
COOK COUNTY, } ss.

I, Charles C. Linthicum, a notary public in and for said county, in the state aforesaid, hereby certify that all the proceedings aforesaid were had as stated, in the cause named in the caption hereto; that I was attended by the counsel named in said caption, at the time and place therein stated, and by the witnesses Jacob Roth, Caleb H. Marshall and E. Nelson Blake, who were of sound mind and lawful age; that said witnesses were first duly sworn to tes-

tify the truth, the whole truth and nothing but the truth, in said cause; that their depositions were reduced to writing in their presence, and from their statements; and that after carefully reading the same over they each subscribed the same in my presence, as and for their depositions in said cause. I further certify that I am not solicitor or of counsel for either of the parties in said cause.

In witness whereof I have hereunto set my hand and notarial seal, this first day of November, A. D. 1883.

[SEAL.] CHARLES C. LINTHICUM,
Notary Public.

COMPLAINANTS' EVIDENCE IN REBUTTAL.

Proofs for final hearing on the part of the complainants in rebuttal, taken by consent of parties to be used in a cause pending in the Circuit Court of the United States for the Northern District of Illinois, in which Theodore H. Butler, George W. Earhart and William M. Crawford are complainants and George Steckel and Frederick Steckel are defendants. In Chancery.

Present: Frank Baker, of counsel for complainants, and Ephraim Banning, Esq., of counsel for defendants.

GEORGE W. EARHART, of lawful age, being first duly sworn and examined, deposes and testifies, in answer to interrogatories to him propounded as follows, on behalf of the complaints.

Q. 1. State your name, age, residence, business and relation to this suit.

A. George W. Earhart; 45 years of age; reside at Columbus, Ohio; am a manufacturer of grocers' goods; and am one of the complainants in this action.

Q. 2. Do you know what a "bretzel" is? If so, state briefly, and also how long they have been in use, and the purpose for which they were used?

A. I know what "bretzels" are; have handled them for many years in my business. A "bretzel" is a configuration peculiar to itself, made from a peculiar mixture of dough and other ingredient; composed of a peculiar kind of dough generally known as bretzel dough and other ingredients; they are first put upon proving boards after they have been formed; when sufficiently proved they are thrown into a boiling kettle and boiled in lye; the next process is to put them upon pans and salt them; then they are put through the process of baking; "bretzels" are used not as a food, but as appetizers; to create and sharpen an

appetite for fluids and solids, as pickles are used. They have been in use, in general use, for ten or fifteen years or more. I don't know to what extent they were used before that time. They have been handled and sold by the cracker trade for ten years at least; before that time they were handled and sold directly from the baker to the retail dealer.

Q. 3. You may state, when and by whom, "bretzels" were first made by machinery to your knowledge.

A. They were first made by machinery to my knowledge by our firm, Butler, Earheart & Co., the complainants in this case, about three (3) years ago on the Lampert and Huber machine.

Q. 4. Have you seen and examined defendants' exhibit No. 7, in this case?

A. I have, and have also experimented with it; worked it.

Q. 5. At the time you so worked it were the creasers in their places?

A. They were, and properly adjusted.

Q. 6. Have you any of the products of said machine? If so, please produce them.

A. I have and I here produce them.

Witness produces three unbaked bretzels and the box containing the same is marked "Complainants Exhibit C," Gilbert H. Stewart, Notary Public.

I will also bake some of the same to be attached to this deposition, marked "Complainants' Exhibit D."

(It is understood and agreed that the baked bretzels above mentioned shall be considered in evidence, the same as if now here produced.)

Q. 7. You may state whether or not the products of this cutter "Defendants' Exhibit No. 7," are what are known to the trade as "bretzels;" and if not, wherein they differ from bretzels.

A. The general configuration is the same as ordinary bretzels in its outline ; but they are imperfect in parts ; the imperfections consist chiefly in the creasers ; the creasers don't make the proper sort of marks to show the twist ; the bow of the die also cuts the bretzels in two at the lower part near the central creaser. which mars the shape of the product ; the bow of the bretzel is left flat on both sides, while a bretzel is rounded ; the proper shape of a bretzel is rounded ; the arms or loops of the product of this cutter are of the same thickness as the bow or body of the bretzel, while in the bretzel proper they have tapering ends, made much smaller than the bow ; a bretzel that is cut flat, as is shown by this product, will retain that shape when baked, while the shape of the bretzel, the proper shape of bretzels, shows a rounded form, the bow as well as the loops.

Q. 8.. You may state whether or not the cutter, "Defendants' Exhibit No. 7," is a machine capable of practical use and operation for the cutting and forming of bretzels ; and if not, state and point out the defects in the same. I refer to the machine with the creasers in their places, properly adjusted.

A. It is not a practical working cutter ; could not be used for practical work in making bretzels, for the reason that the creasers are made separately, in separate pieces, instead of being made solid on the face of the die, leaving openings between the creasers and the die, into which the dough is forced, and made to stick, especially in the central creaser ; so that the clearers fail to clear the bretzel from the die. The bretzel not being cleared in the operation of the machine, doubles up and clogs, making the machine entirely impracticable.

Q 9. Have you bretzels cut upon a machine, constructed according to the patent sued on in this case, No. 274,264 ; if so, please produce them ?

A. I have, and I produce a box of the same unbaked,

which is marked "Complainants' Exhibit E"; and a box of the same, baked, marked "Complainants' Exhibit F."

Q. 10. Describe briefly the process of rolling out dough into bretzels by hand; and state the quantity a workman can roll out per day by hand.

A. They are made, by hand, by cutting from a sheet of dough a sufficient quantity to make a bretzel; this piece is then rolled by hand until it is of sufficient length and shape to make a bretzel; this shaps is round or cylindrical, tapering from the center to each end; then the bretzel is formed by making the bow, giving it the twist and fastening the ends. It is considered a day's work for an expert hand to make by hand two thousand, or one barrel of bretzels, weighing about fifty pounds.

Q. 11. You may state how many men are required to operate the bretzel machine described in your patent, sued on in this case, No. 274,264, and the quantity of bretzels that can be cut with such machine in a day.

A. It depends on the number of cutters and the speed of the cutter. In an ordinary cutter with six cups, run at ordinary speed, employing four men, from 150 to 200 barrels can be made in a day of ten hours. The number of cups and the capacity of the cutter can be increased to double that amount without employing any more men in running the machine.

Q. 12. What do you say as to the quality of the machine made, as compared with the hand made bretzels?

A. The quality of machine made bretzels is as good as those made by hand, when they are made out of the same kind of stock and the same care taken in cooking them. The quality does not depend on whether they are made by hand or machine, but upon the stock used and the care taken in cooking and baking them. Any kind of dough that is desired can be used with equal facility on the machine, whether it is hard or soft dough.

Q. 13. What do you say as to the difference, if any, between hand made and machine made bretzels, in reference to breakage in shipment?

A. When they are made with equal amount of stock, and the same quality of stock, the machine made bretzels are less liable to break in shipping than the hand made, for the reason that in the hand made bretzels the points are left projecting over the bow and are easily broken off, and in the twist of the bretzels the two parts are not tightly formed together, and the ends where they join the bow are generally not tightly fastened; whereas, in the machine made, these points are made solid, making the bretzel firm and less liable to break. We formerly had complaints of machine made bretzels breaking in shipment, but these were made on our first machine and were very small in size. We have had frequent complaints of breakage of hand made bretzels in shipment.

Q. 14. You may state the difference in cost of manufacture of bretzels by hand and by the machine described in the patent sued on in this case, No. 274,264, supposing both to be made from the same stock at the same time.

A. From my knowledge of the business and information I have received from other parties, I should say there was a difference of 4½ to 5 cents per pound in favor of machine made bretzels—or of 40 to 50 per cent.

Cross Examination by Mr. Banning, of Defendants' Counsel.

X Q. 1. As I understand you, you say that hand made bretzels are made in the same way and of the same dough as machine made bretzels, except that the dough is formed or shaped by hand instead of by machinery?

A. Yes, sir.

X Q. 2. You have spoken of advantages in the use of the machine over work by hand, apparently important. Are these advantages any greater or more important in the mak-

ing of bretzels than the use of cutting machines in the making of crackers and cakes?

A. They are of much greater importance in the manufacture of bretzels, for the reason that crackers or cakes are easily formed by hand and can be rapidly made, while it is a slow and tedious process to make bretzels by hand, on account of the formation of the dough, the twisting, and fastening of the points.

X Q. 3. Are such advantages any greater or more important in the making of bretzels than the advantages derived from the use of dies and cutting machines in the making of crackers and cakes of peculiar forms or shapes—say as peculiar or difficult of formation as the form or shape of a bretzel?

A. I have never seen any crackers or cakes that were so difficult to form as bretzels are. But if there are any such crackers or cakes as peculiar or difficult of formation as the form or shape of a bretzel, which have been made by hand and are now made by machine, the advantages would be the same.

X Q. 4. Could not the product of this die, "Defendants' Exhibit No. 7," be used and sold generally and in the market along with your own bretzels, as a good and marketable bretzel?

A. I don't think it could be put on the market and sold as a bretzel alongside of ours, on account of the imperfectness of its form or shape.

X Q. 5. Saying nothing about the time of the invention or supposing this die, "Defendants' Exhibit, No. 7," to have been made after yours, would you consider its use an infringement of the patent sued on in this cause, No. 274,264?

Question objected to by complainants' counsel.

A. I haven't studied the cutter with a view to that, and I am not prepared to say.

X Q. 6. Can you state what part or parts of the invention claimed in the patent in this case, No. 274,264, was first suggested by you, and what part or parts by your coparteners, respectively?

Question objected to by complainants' counsel, as not proper cross-examination; not relating to any matter touching which the witness was examined in chief, and not proper evidence for defendants at this time.

A. The idea of making a bretzel cutter that would mould bretzels and cut them out with a flat die on a flat surface, was first suggested by me. I presented it to Mr. Butler and Mr. Crawford; the subject was talked over, ideas advanced and suggestions made in regard to it by each one of us. I can't define the exact boundaries of the suggestions made by each one. We all participated in it.

X Q. 7. You state that you commenced using the Lampert & Huber machine about three years ago.

A. That is the fact.

X Q. 8. When did you first commence using, in the making of bretzels, the machine described in the patent in this case, No. 274,264?

A. About the date of the patent, sometime in 1883.

X Q. 9. Which machine have you used since that time, this machine or Lampert & Huber machine?

Question objected to by complainants' counsel as not proper cross-examination.

A. We have used both of them; we have mainly used the Lampert & Huber machine. The reason why we have used the Lampert & Hubert machine principally was because we had it already set up in our bake shop and had been running it and had no room for the other machine. We, however, have used the one described in this patent, No. 274,-264, frequently, more for the purpose of testing it than to make goods for the trade.

X Q. 10. Is there any difference in quality or appear-

ance between the bretzels made by the Lampert & Huber machine and those made by the machine described in this patent, No. 274,264?

A. In the form and shape of the bretzel after they are baked, they are the same; where the stock is the same the quality is the same.

GEORGE W. EARHART.

Also E. E. ENSIGN, of lawful age, being first duly sworn and examined, deposes and testifies, on behalf of the complainants, in answer to interogatories, to him propounded, as follows:

Q. 1. State your name, age, residence and business.

A. E. E. Ensign: 40 years of age; residence, Columbus, Ohio; my business is that of traveling salesman for Walter G. Wilson, of Philadelphia, selling cakes, bretzels and all kinds of bakers' goods; I have previously been in the employ of S. S. Marvin & Co. of Pittsburgh, in the same business; having been with them for the period of eight years, and up to the 1st of February, A. D. 1882.

Q. 2. How long have bretzels been handled and sold in this country by the cake and cracker trade.

A. They have been handled ever since 1874, to my knowledge; don't know how it was before then.

Q. 3. Please state the form and shape of bretzels.

A. The dough for a bretzel as made by hand was rolled in small strips with tapering ends, then brought around in a bow-like shape, the two ends crossed at the center, ends fastened to main bow and pressed down with the fingers.

Q. 4. Then this piece of dough made and formed as described, when properly cooked and baked, is what is known as a bretzel?

A. Yes, sir.

Q. 5. You may state whether or not before 1881 any attempts were made to make or devise a machine for making bretzels by machine?

A. I don't know as I can remember as to dates; the first I knew of bretzels being made or attempted to be made by machine, was Butler, Earhart & Co. making them by machine. This is the first I knew, personally, about it. I had heard the trade say previous to that, speaking of machine made bretzels, that they didn't think any machine for making bretzels would prove a success; the trade said they had never been able to make a machine able to produce a bretzel resembling a hand made bretzel. They said attempts had been made, but I don't know as they said by whom.

The last part of the answer following the words "I knew personally about it," objected to by defendants' counsel as being mere hearsay.

Q. 6. Have you seen the bretzels manufactured by S. S. Marvin & Co., of Pittsburgh, cut with a machine or cutter, during the latter part of the year 1881?

A. I have.

Q. 7. State wherein, if at all, said bretzels differed from hand made bretzels.

A. The outline or profile of the Marvin machine bretzel was like the hand made bretzel, but it was cut out of a sheet of dough of equal thickness and was flat, or nearly so, on top and bottom; and the sides cut straight, and only tapered one way, *i. e.*, by narrowing, at the crossing in the center it didn't resemble the hand made at all; it did not show any twist looking at it from the face of the bretzel, but resembled stamped work.

Q. 8. What do you say as to whether the bretzels formed as you have described with straight cut sides, flat, or nearly flat, top and bottom, and center showing no twist or resemblance of crossed bows or ends, are or were good and marketable bretzels?

A. They were not, as far as my trade was concerned; my trade objected to them in almost every instance. I

then sold the trade south of the line of P. F. W. & C. Ry. in Ohio, and the border towns of West Virginia.

Q. 9. What objections were made?

A. The objection made as to the form was that they did not resemble the hand made bretzel; they were not finished; they didn't look as if they had been rolled out and twisted by hand; they resembled stamped work.

Q. 10. Please look at the bretzels "Complainants' Exhibit F," and say whether or not the same are good and marketable bretzels.

A. They are.

Q. 11. During the time you were with Marvin & Co. and after they began to cut or stamp bretzels by machine, state whether you saw the machine.

A. I did not.

Q. 12. Did you speak to any member of the firm about seeing it; if so, state what was said?

A. I did, and with Mr. Marvin; when the bretzel was shown me that was made on that machine, I asked what patent the machine might be called; he said that it was an attachment that could be applied to any cracker machine, at a very slight cost; I asked if it was patented, and he said, "not yet," and it was of their own getting up. I made the remark if anyone could see it, and he made the remark, it was not for everyone to see, and I pressed my remark no further.

Cross Examined by Mr. Banning, of Defendants' Counsel.

X Q. 1. Did Mr. Marvin refuse you permission to see that machine?

A. From the answer he gave me, I took it to be a refusal.

X Q. 2. Did you actually ask to see the machine, and did he actually refuse you permission to do so?

A. Well, I didn't actually ask him or force the question

whether I should see that machine or not, but merely asked if the machine could be seen. His answer was, as near as I can remember, that it was not for every one to see.

X Q. 3. Did you ever tell Marvin & Co. that the trade objected to their bretzels because they were made by machine?

A. I don't remember whether I ever had any conversation with them with regard to that or not.

X Q. 4. Mr. Rumsey has testified in substance that the trade and public generally were not aware that their bretzels were made by machine until a short time, say a few months ago. Do you know whether this was so or not?

A. I can only speak as to my own trade. My own trade knew 18 months ago, or thereabouts, that those bretzels were made by machinery. They knew it soon after they came out.

X Q. 5. Can you state why your trade objected to Marvin & Co.'s machine made bretzels—was it because they were not good in flavor, or liable to break in shipping, or because of their appearance?

A. My trade in general objected to the appearance and the quality as well, but don't remember of more than ordinary complaints about the breakage.

X Q. 6. How many persons can you remember, objecting to Marvin & Co.'s machine made bretzels because of their appearance?

A. I couldn't answer as to how many objected, but a large portion of my trade.

X Q. 7. Can you name any who made this objection?

A. I wouldn't wish to be sworn as to who it was, or how many, for I cannot remember, it was so long ago.

X Q. 8. Are you willing to be sworn to the fact that any considerable number made such objection because of the appearance of the bretzels?

A. I would willingly be sworn that they did object on

that account. The trade said that they couldn't sell a bretzell that didn't resemble the hand made bretzel.

X Q. 9. And yet, although stating that a large number did make such objection, you cannot name a single one who did so?

A. I remember one party in Lancaster, Ohio, but I cannot remember his name. I don't go there any more, and I have forgotten his name.

X Q. 10. Can you remember any others?

A. Personally, I can't.

X Q. 11. How often did you talk with Marvin & Co. about their making bretzels by machine?

A. I don't know how many times I talked with them generally about making bretzels by machinery. We talked a great many times about making bretzels by machinery, they generally advancing the subject.

X Q. 12. Did you talk with them often and freely about matters in which you was interested as one of their traveling salesmen, particularly about the wants and requirements of the trade, etc.?

A. I got in about once a month, and talked in a general way about business, etc., and received my instructions. My stay varied from a half a day to two days at a time.

E. E. ENSIGN.

Also WM. M. CRAWFORD, of lawful age, being first duly sworn and examined, deposes and testifies on behalf of the complainants, in answer to interrogatories to him propounded, as follows:

Q. 1. Sate your name, age, residence, business and relation to this suit.

A. Wm. M. Crawford; age, 43 years; residence, Columbus, Ohio; business is wholesale manufacturer of grocers' goods, including crackers and bretzels; and am one of the complainants in this suit.

Q. 2. Do you know what a bretzel is? If so, state.

A. I think I do. It is an article of food used as an appetizer. A bretzel is made from dough and other ingredients, conforming somewhat in appearance to the shape of a heart, having a bow, with loops and an intermediate twisted portion, and ends fastened to the body of the bow.

Q. 3. How long have they been manufactured and sold?

A. As an article of commerce, in a general way, some ten or twelve years.

Q. 4. You may state what you know, if anything, in reference to attempts to make machines for making bretzels prior to 1882, excluding the Lampert & Huber machine and the cutter used by S. S. Marvin & Co., of Pittsburgh.

A. Of my own personal knowledge I know of but one machine, which was made by Keller & Myers, of Lincoln, Pennsylvania. I heard of the machine about the year 1879 or 1880, and went to see it, with a view to purchasing it for the purpose of making bretzels. Upon examining it, I found it to be a very complicated machine. It took the dough from a hopper, cut it off into small pieces of sufficient size to make a bretzel; the piece of dough passed over a cylinder upon which was a jacket of peculiar shape which rolled the dough out into an oblong, tapering strip; after which it deposited it upon a movable apron which carried it forward to a block, whereupon fingers working automatically took up the ends of the dough and twisted it into a heart-shaped bretzel, making but one bretzel at a time. The machine, owing to its complicated mechanism, would not produce but seldom a perfect bretzel, there being fully 75 per cent. of them cripples. On that account I refused to purchase it. An interest in it was afterwards sold to J. W. Ruger, of Buffalo, N. Y., a manufacturer of bakers' machinery, and Kebler, Mueller & Co., bretzel manufacturers, of Philadelphia. I afterwards saw the machine in Philadelphia, in the bretzel bakery of Kebler, Mueller & Co. It had

been abandoned as useless for the purposes for which it was manufactured.

Answer objected to by defendants' counsel, as immaterial and incompetent, it being unimportant whether the machine referred to by the witness was a good and sucessful one or not.

Q. 5. Do you know S. S. Marvin and Cornelius E. Rumsey, partners as S. S. Marvin & Co., and engaged in the manufacture of cakes, crackers and bretzels at Pittsburgh?

A. I do.

Q. 6. Did you ever have a conversation with them, or either of them, in reference to the use by them of a machine for cutting and stamping bretzels? If so, please state it.

A. I did, sometime in the spring of 1882. I called upon them at their place of business, and told them that I had heard that they were operating a machine for making bretzels, and from what I could hear, I thought it was an infringement upon our patents, and requested the privilege of seeing it, which request they refused, saying that they did not allow any one to see it.

Q. 7. Had you, before that time, shown them, or either of them, your Lampert & Huber machine?

A. I had. I had shown it to Mr. Rumsey, and also worked it for him, a few months previous to my visit to Pittsburgh, on the occasion spoken of, having in view the object of selling him the machine.

Q. 8. Have you seen and examined and worked and operated the cutter, "Defendants' Exhibit No. 7," with the creasers in their respective places, properly adjusted? If so, state whether the machine is or is not a practical machine, susceptible of practical use and operation in making bretzels.

A. I have seen and used it, and do not consider it a practical working machine.

Q. 9. When did you see and use it?

A. Since it was sent here for examination.

Q. 10. State what defects exist in said machine, and fully, why it is not practicable.

A. It is defective in the central creasers; making the twist; in the top of the die not being rounded; in its cutting through the bretzel on the lower portion of the die, thereby causing the bretzel, after it has been cut, to adhere to the central portion of the die, thereby preventing its discharge therefrom; also in the off-bearing scrap passages not being so constructed as to take up the scrap; also in the general appearance of the bretzels after they are formed, in their being of uniform thickness, flat on both sides and square on the edges. The central creasers are defective also, in being set into the die in such a way as not to form a perfect twist, and in that they cut nearly through the dough; the end creasers are objectionable for the same reasons.

Q. 11. Have you seen and examined the machine made bretzels made and sold by S. S. Marvin & Co., of Pittsburgh? If so, describe them.

A. I have seen what they sell for and call a bretzel. They are a piece of baked dough conforming somewhat in outline to the shape of a bretzel. They are flat on both sides, unpalatable and unsightly. They are of uniform thickness throughout, with square edges, without the twisted center, and without their conforming in appearance to those of hand made goods.

Q. 12. What do you say as to whether the products of their machine, as above described, are or are not good and marketable bretzels?

A. I should say they were not.

Q. 13. Why not?

A. Because they are not a bretzel. They are not finished, by their not having the intermediate twist; by their not conforming to the rounded shape and appearance of

hand made goods; and by their being simply a flat piece of baked dough, more like a cracker than a bretzel.

Cross Examined by Mr. Banning, of Counsel for Defendants.

X Q. 1. At the time of your interviews with Mr. Rumsey, your firm were owners of, or interested in, the Lampert & Huber patents, were they not?

A. They were. We have been owners of an interest in those patents since about 1879.

X Q. 2. Assuming your patent, No. 274,264, to be valid, which of course would be assuming that you and your co-patentees were the first inventors of the machine described and claimed in it, would you consider it to be infringed by this die or cutter, "Defendants' Exhibit No. 7?"

Question objected to by complainants' counsel as not proper cross-examination, and as improper.

A. I cannot answer that question, as I have not given the matter any thought.

WM. M. CRAWFORD.

I, Gilbert H. Stewart, Notary Puclic in and for the County of Franklin and State of Ohio, do certify that Geo. W. Earliart, E. E. Ensign and Wm. M. Crawford were by me severally sworn to testify the truth, the whole truth, and nothing but the truth, and that the depositions by them respectively subscribed, as above set forth, were reduced to writing by myself, in the presence of the witnesses respectively, and were respectively subscribed by said witnesses, in my presence, and were taken by consent of parties, on the 20th day of October, A. D. 1883, at my office, Room 35, Deshler Block, Columbus, Ohio; and that I am not counsel or attorney of either party, or otherwise interested in the event of said suit, or a relative of either party.

Witness my hand and official seal, the day and year aforesaid.

GILBERT H. STEWART,
Notary Public in and for Franklin County, Ohio.

Fees, writing and certifying deposition, $11.20; swearing three witnesses, 50 cents; $11.50 total. Received of complainants in above case, 11 $\frac{50}{100}$ dollars, my fees for foregoing depositions.

GILBERT H. STEWART,
N. P.

Proofs for final hearing taken on the part of the complainants in the above entitled cause, before Joseph Forrest, United States Commissioner for the District of Columbia, at the office of Edson Brothers, 917 F St., N. W., Washington City, District of Columbia, commencing on Thursday, the 6th day of March, 1884, at 11 o'clock A. M.

Present—Joseph R. Edson, of counsel for complainants, and Ephraim Banning, of counsel for defendants.

PHILIP T. DODGE, a witness produced, sworn and examined on the part of the complainants, deposes and testifies as follows in answer to interrogatories by Joseph R. Edson, of counsel.

Q. 1. What is your name, age, occupation and place of residence?

A. Philip T. Dodge; age, 32 years: attorney and solicitor of patents, and mechanical expert; Washington, D. C.

Q. 2. Please state, briefly, what experience you have had in the examination and comparison of inventions, and patents therefor, and in giving testimony as an expert before the courts.

A. For the past 13 years I have had occasion in the practice of my profession, to consider, analyze and compare inventions, machines and patents in great numbers, to consider both theoretically and practically, the operation of many classes of machinery,, and to prepare and prosecute a large number of applications for patents. I have been called upon, in my business, to visit shops and factories in many parts of the country and to examine critically the

practical operation of the machinery and appliances employed therein. I am also a practical mechanical draughtsman, and as an amateur am familiar with the use of ordinary mechanical tools and appliances. I have frequently been called upon to act as an expert in mechanical matters, with and without being sworn. I have testified in various suits relating to patents.

Q. 2½. Have you examined the specification and drawings of the letters patent of the United States, No. 274,264, and uncertified copy of which is herewith filed in evidence by consent, and marked "Complainants' Patent Exhibit," and do you understand the construction and operation of the machine therein shown and described?

A. I have examined the patent stated, and believe that I understand the construction and operation of the machine therein represented.

Q. 3. Have you examined and do you understand the construction and operation of "Complainants' Exhibit A," now shown you?

A. I have examined the exhibit, and believe I fully understand it.

Q. 4. Please state whether said exhibit has or has not the combination of elements set forth in the first claim of said patent.

A. I do find in the exhibit A the combination of elements specified in the first claim of patent No. 274, 264, that is to say, the exhibit presents a flat die for cutting bretzels, having the bow, the two loops, and fine creasers. which appear to have substantially the same form, and practically the same effect as those described in the patent.

Q. 5. Answer the same question as to the second claim of said patent.

Question objected to by defendants' counsel as not proper in rebuttal—this objection to apply to question No. 4, as well.

A. I do find in exhibit A the combination of elements specified in the second claim of patent No. 274,264. Those elements appear to have the same mode of operation as those set forth in the patent. There are trifling differences in form, but they appear to be immaterial, or such as not to affect the mode of action of the parts.

Q. 6. Answer the same question as to the third claim of said patent.

Same objection as to question 5.

A. The exhibit A appears to contain also the combination specified in the third claim of the patent. The expelling studs in the patent are relatively smaller than those in the exhibit, in other words, the studs of the exhibit are made larger or with more expanded surface to act upon the dough, than those represented in the patent; but this appears to be mearly a difference in degree, and not such a difference as to affect their mode of action.

Q. 7. Please examine the cuts of dies Nos. 4 and 7, appearing on pages 43 and 49 of defendants' exhibits Nos. 12 and 13 respectively, filed in evidence in this cause, and state whether or not the twists therein shown are the equivalents of the creasers as shown and described in the patent No. 274,264, giving your reasons for any opinions you may express.

A. I have examined the exhibits referred to. They represent patterns for fancy borders for crackers, in other words, a means for forming an ornamental edge or margin on a cracker. I do not think they are the equivalents of the creasers shown in patent No. 274,264, for the reason that they do not appear to be designed or adapted to produce an imitation of one piece of dough laid across another, as intended by the patented device. Moreover, they are not shown in connection with a die for cutting bretzels, and in the form shown in the exhibit could not be so applied as to give the effect or result for which the patented device is de-

signed. Further, the exhibits fail to show creasers having the effect of those described in the patent, for the reason that their relation or height in relation to a die, is not shown. The creasers shown in the patent have their edges sunk into the die below the cutting edges, so that, while the cutting edges will pass through and completly sever the dough, the creasers will simply indent the same.

Q. 8. Have you examined and do you understand the construction and operation of defendants' exhibits Nos. 14 and 15 filed in this cause?

A. I have examined and do understand the exhibits stated.

Q. 9. Please compare defendants' exhibit No. 14 with the 1st, 2d and 3d claims respectively of the complainants' patent, and state whether it does or does not contain the devices and combinations of elements set forth in either of said claims, giving your reasons for any opinion you may express.

A. Referring to exhibit 14, I do not find therein the combination specified in the first claim of the patent. First, because it presents a die having the form of the letter B, instead of the conformation peculiar to a bretzel with its bow and two loops, so-called. Second, because the exhibit fails to present the creasers specified in the first claim, or any equivalent therefor. With respect to the second claim, the exhibit differs from the patent in having but two passages or openings, instead of three; also, in having the expelling stud in one continuous piece, filling the entire surface of the die, instead of several studs, as in the patent. The use of a continuous stud or expelling device prevents the employment of creasers or devices to give the surface of the product the appearance of having one portion lapped over the other. The exhibit is a small die, apparently for cutting crackers, which are made from soft dough, which is commonly floured or dusted to prevent its adherence to the

dies. The openings or dough passages in the exhibit are of very small size, and are not adapted to take up and bear off the internal scrap from bretzel dough, which is made hard or of a stiff consistency, and which is necessarily worked without being floured or dusted like cracker dough. Referring to the third claim of the patent, the exhibit 14 fails to show a bretzel-shaped die having three passages, as demanded by the claim.

Q. 10. Do you know of any objection to the flouring of bretzel dough before the application of the dies for cutting out the bretzel?

A. Yes, there is a very serious objection. Bretzels are boiled in lye for a short time, before being baked. If floured before entering the lye, the flour will accumulate in and upon the liquor, giving to the bretzels a mottled and unsightly appearance, preventing that glossy finish which is desirable.

Q. 11. Please answer question 9 by comparing defendants' exhibit No. 15 with the 1st, 2d and 3d claims of complainants' patent sued on.

A. Referring to the language of the first claim, the exhibit fails to show a die for cutting bretzels, or any other die having a bow *a*, and loops *a' a'*. It also fails to disclose five creasers, and in the form and arrangement specified in the claim. Passing to the second claim, the exhibit represents a die having two instead of three passages. It is not a bretzel cutter, but a cutter for producing the character "&." It is intended for cutting crackers, and its two passages are of such size and character that bretzel dough cannot be practically delivered through them. By this, I mean to be understood that, as exhibit 15 now stands, it cannot be practically used for working dough such as employed in the making of bretzels, to deliver the scrap through the passages. With respect to the third claim, the exhibit does

not show a bretzel-shaped die, or a die having three scrap-passages, as specified in the claim.

Complainants' counsel herewith files in evidence a box containing specimens Nos. 1 to 14 inclusive, of products of defendants' exhibits Nos. 14 and 15, said box being marked "Complainants' Dodge-Robertson Exhibit."

Q. 12. What have you to say as to either of defendants' exhibits Nos. 14 and 15 having practical off-bearing internal scrap passages? Have you made any experiments with said exhibits? and if so, state what you did and the results obtained.

A. I have made lengthy practical tests of the exhibits 14 and 15, and have also seen the same operated by others in my presence, in connection with dough such as is used in the manufacture of bretzels. The tests established conclusively the fact that the openings or passages in the exhibits, as they now exist, are not practical off-bearing scrap passages for bretzel dough. It was found that after the first few impressions, generally after the second, and frequently after the first, the stiff bretzel dough would lodge in the passages and remain immovably in position. This condensed and solidified dough filling the passages, caused the hollow cutters to act in the same manner as solid dies or punches. In no instance did the scrap continue its movement so as to be discharged through the top of the passages. It was found that, although the outer cutting edges of the die were forced completely through the dough, the inner hollow cutters failed to remove the scrap. When filled with the solid dough, the action of the hollow cutters would be to displace the dough of the sheet, forcing it laterally away from under the hollow cutter, and causing it to flow outward into the body of the sheet, instead of passing upward through the passages. It was found that the dough was consolidated in the passages so firmly that a very considerable exertion was required to force it out by means of

a stick or other instrument. The experiments to which I refer were made during the past week in the bakery of an old bretzel manufacturer, whose name I cannot give, located on the south side of O St., between 6th and 7th Sts., N. W., in the city of Washington, in the presence of Mr. Edson, counsel in this case, Mr. T. J. W. Robertson, the baker, and his two assistants.

Q. 13. Your attention is called to the fact that the exhibits, "Dodge-Robinson 1 to 14" do not all show the dough equally depressed at the points opposite the small tubes. Can you explain the cause of this difference?

A. In some few of the exhibits, care was taken to limit the descent of the die, for the purpose of determining positively what became of the dough opposite the central cutters or punches in the course of their descent. The fact that the die was depressed more in one case than in another, accounts for the difference in the appearance of the exhibits. The fact that the die was fully depressed in many cases without removing the scrap from the centre, will be manifest on examining the rear faces of the exhibits, which show that the outer cutting edges of the dies passed entirely through the dough. Attention is particularly directed in this regard to exhibits Nos. 2 and 14. In the impressions marked "a" and "b," exhibit 14, a thin film of dough remains in the upper opening, the remainder having been displaced laterally by the pressure of the solid punch—that is, the punch filled with hard dough, immovably fixed therein.

Q. 14. Has defendants' exhibit No. 1 off-bearing internal scrap passages—that is, passages which will discharge its scrap at the top of the scrap passages?

A. It has not.

Q. 15. Please compare the invention claimed in complainants' patent, No. 274,264, with the patents Nos. 184,786 and 224,446, offered in evidence by defendants, and state whether or not the construction and combination of

elements claimed in the former, is shown in either of the latter, giving your reasons for any opinion you may express.

A. Referring first to patent No. 184,786, to Lambert and Huber, it does not contain the subject matter of the first claim of complainants' patent, No. 274,264, for the reason, first, that it does not present a flat die; second, because it does not present the creasers "a^5 a^5" "a^7 a^7" demanded by the claim; third; because the creasers represented in the patent 274,264, have their edges in a plane below the edges of the die. This relative arrangement of the creasers and cutting edges is important in a flat die designed to stamp or cut through the entire thickness of the dough. If the creasers were carried to the same height as the cutting edges of the die, they would cut through or sever the bretzel at the center, permitting a portion to escape, and also lessening the strength of the bretzel, so that it would not be so well adapted to stand transportation without breaking. Passing now to the second claim, patent No. 184,786, fails to disclose several elements of the combination specified. It is without the feet, the guide-rods or the head piece. It shows no means for operating the expelling studs. Referring next to the third claim of complainants' patent, the patent 184,786 fails to show a die containing both passages for the scraps and expelling studs to remove the bretzel. The patent 184,786 shows the dies arranged in curved form on the periphery of a hollow cylinder. It is not designed to have the passages or openings retain and bear away the scrap; on the contrary, the machine is so constructed that the scrap is discharged immediately, upon being cut, through the openings into the cylinder. The Patent Office model upon which this patent was granted, has the openings enlarged or flared toward the inside of the cylinder, obviously to permit the instantaneous release of the scrap. The expelling studs of the patent 184,786 are not mounted in the dies which have the

scrap passages. The dies of this patent are designed to work in pairs, one opposing the other. The two dies act on the dough from opposite sides, and neither die can cut a bretzel, discharge the scrap and expel the bretzel, unless operated jointly with its companion; on the contrary, a single die, such as represented in complainants' patent, is is adapted to cut the bretzel, remove the internal scrap and discharge the bretzel.

Passing now to the consideration of patent 224,446, I find it to consist of two hollow cylinders, each provided with peripheral dies, co-operating with corresponding dies on the other cylinder. This patent does not anticipate the first claim of the patent 274,264, for the reason that it does not exhibit the several creasers specified in said claim. It shows a single creaser at the center, but this creaser rises to the level of the cutting edges and could not be successfully used on a die intended to cut entirely through the dough, like that in complainants' patent. The second claim of patent 274,264 is not anticipated, for the reason that the guide rods, the springs, the feet or projections and various other parts specified in the claim are absent. The patent 224,446 fails to disclose the matters defined in the third claim of patent 274,264, in that its dies does not contain both the scrap passages and the expellings tuds. Said patent, 224,446 shows dies which are necessarily used in pairs.

Q. 16. From their appearance, how old would you say defendants' exhibits Nos. 14 and 15 are, and how much have they been used, giving your reasons for any opinions you may express?

A. I have given the exhibits referred to a critical examination. It is impossible to fix definitely their age, but I have no hesitancy in saying that they are of recent date, and that they have had little, if any, practical use. Experience has shown me that in devices of this character, use would cause the marking surfaces to become smooth and

polished, that the other metal surfaces become dark and discolored, and that all the openings will become filled with dust and dirt, all of which indications are absent in the exhibits. I have no hesitation whatever in saying that it is impossible for these exhibits to have been in practical use for any considerable length of time.

Cross Examination by Mr. Banning, of counsel for defendants.

X Q. 17. Have you any special familiarity with patents or inventions relating to bakers' machinery?

A. None other that acquired in examining the records of the Patent Office from time to time, and from having seen machinery of this general class and in operation at different times previous to my being called in this case.

X Q. 18. In making the experiments or tests, so called, to which you have referred, were the dies operated by machinery or by hand?

A. By hand, on a flat table or surface. My entire weight, some 160 pounds, was in nearly every instance thrown upon the hand-piece, to depress the die proper. In cases before mentioned, care was taken to prevent the complete depression of the die, in order to study its action.

X Q. 19. Do you know what weight is applied to depress the die when it is operated by machinery?

A. In pounds, I do not. It must, of course, be sufficient to overcome the resistance of the springs and force the die entirely through the dough.

X Q. 20. How do you come to know about the relative consistency of the dough used in making bretzels, and the dough used in making cakes, crackers, etc., and about the boiling of the bretzels or other similar matters which you referred to in your direct examination?

A. By having seen cakes and crackers made by hand and machinery, and having seen and handled the bretzel

dough, and by having witnessed the operations connected with the boiling and making of hand made bretzels. Also by conversing with different persons with regard to the subject.

X Q. 21. Where and how often have you seen all this, particularly with reference to the bretzels?

A. I have seen cakes and crackers manufactured at various times and places, several years since at the factory of Hanvensen & Co., in this city, also at a bakery in the city of New York, the name and location of which I am not now able to give, my attention having been attracted as a passer by, and also at a fair in the city of New York, I think at the American Institute. As to the manufacture of bretzels, the only place where I have actually viewed the operations was at the bakery in this city referred to in my direct examination.

X Q. 22. Then your only information in reference to the manner in which bretzels are manufactured, is that which you derived from what you saw and were told at the bakery where these experiments were made, mentioned in your direct examination?

A. Largely, but not wholly. It is proper to explain that while experiments were being conducted in one end of the bakery, the ordinary operations were being carried on in the other, and at the same visit I had the opportunity to witness these operations and fully interrogate the workmen.

Re-Direct Examination.

R-d. Q. 23. Assuming that dies similar in construction to those shown in defendants' exhibits 14 and 15 were made and used before the date of the patent of the complainants' sued on, would you say that inventive genius or only ordinary mechanical skill was required to make the combination or construction of devices claimed in complainants' patent No. 274,264?

A. In view of the difference between the articles produced by the exhibits 14 and 15 and the article required to be produced by the complainants' patent, and of the further fact that that the bretzel dough requires to be used without that flouring permissible in other articles, I think that more than mechanical skill was required to produce a practical and successful die such as represented in complainants' patent. I think it may be said that the exercise of invention was required to make the change. It may not have required inventive talent of the highest order, but I think the changes were such as could not have been fairly expected from a mechanic exercising only mechanical skill. I am the more strongly of this opinion because my experiments established the fact that the exhibit dies, in the contion in which they actually exist, did not operate successfully in bretzel dough, thereby showing that changes were necessary to adapt them for use therewith.

R-d. Q. 24. Can you give the date of the oldest American patent for bretzel machine? State how many or about how many patents have been since issued in the same class of inventions.

A. I cannot state positively the date of the first American patent. My impression is that it was about 1875 or 1876. There are very few patents on these machines; I think not to exceed a dozen. The manufacture of bretzels by machinery appears to be a comparatively new art.

P. T. DODGE.

Subscribed and sworn to before me this 6th day of March, 1884.

Adjourned at 5:15 P. M., to meet at same place at 10 A. M., Friday, March 7th, 1884.

JOSEPH FORREST.
U. S. Commissioner.

Friday, March 7th, 1884. 10 A. M.; met pursuant to ad-

journment, time and place stated. Present the respective counsel as before.

MR. THOMAS J. W. ROBERTSON, a witness produced, sworn and examined on the part of the complainants, deposes and testifies as follows, in answer to interrogatories by Joseph R. Edson, of counsel.

Q. 1. State your name, age, occupation and place of business.

A. Thomas J. W. Robertson; 51 years; patent solicitor and mechanical expert; 605 7th St., N. W., Washington City, D. C.

Q. 2. Please state, briefly, what experience you have had in the examination and comparison of inventions and patents therefor, and in giving testimony as an expert before the courts, and any other experience which you consider qualifies you to testify as a mechanical expert.

A. For the last 30 years I have been particularly engaged in the study of theoretical and practical mechanics. During the first half of this period I devoted myself mainly to getting up new inventions, and obtained many patents therefor. For the last half of that period I have been engaged mainly as patent solicitor and mechanical expert, during which time I have made many thousands of examinations to determine the patentability and novelty of alleged new inventions. I have been frequently called to testify as an expert in patent suits between private parties, as in this case, and also in several suits brought against the officers of the United States for the infringement of patents, having been engaged for this purpose by the Department of Justice, the Chief of the Stamp Division of the Treasury, and the U. S. District Attorneys of New York and Connecticut. I have also been employed in a similar capacity by the counsel for the cities of New York, Brooklyn, N. Y., and this city, and also by the counsel for several large manufac-

turing companies, the Erie Railway, and Western Union Telegraph Co. As touching the matter under consideration, I would state that I was employed for several years previous to my majority in a bakery, where I became familiar with the manufacture of fancy cakes and crackers.

Q. 3. Have you examined the specifications and drawings of the letters patent of the United States No. 274,264, and do you understand the construction and operation of the machine therein shown and described?

A. I have, and I believe I do.

Q. 4. Have you examined the testimony given in this cause by Geo. J. Hill? and if so, state whether or not the devices described in his testimony relate to the construction and combination of elements described and claimed in complainants' patent 274,264, giving your reasons for any opinion you may express.

A. I have carefully examined said testimony, and find that it relates to parts of a machine designed to be used for making bretzels, but, as appears from the testimony, said machine was never completed. On referring to the description of said machine contained in said testimony, I find it to be an essentially different apparatus from that described and claimed in complainants' patent No. 274,264, for it necessitated two operations and the conjoint action of three separate instruments to complete a bretzel—that is to say, there was a device by which the bretzel was first roughly cut into form, and then subjected to the joint action of an upper and lower die, which gives a finished form to the bretzel. There is nothing in the description to show that the cutter had any creasers or any off-bearing scrap passages—in fact, the answer to question 24 expressly states that the cutter "had no passage for expelling the scrap." The formers or dies apparently had creasers in them, but they had no off-bearing scrap passages, and from all that appears in the specification, were simply moulds to give the shape to the bretzel

after it had been roughly formed into shape by the cutter, and were incapable of cutting out the bretzel. In view of which, I consider that if said machine had been completed, instead of having been abandoned, as the witness swears it was, it was not a machine that would anticipate the combinations claimed in complainants' patent No. 274,264.

Q. 5. What have you to say as to either of defendants' exhibits Nos. 14 and 15 having practical off-bearing internal scrap passages? Have you made any experiments with said exhibits? and if so, state what you did and the results obtained. Your attention is also called to "Complainants' Exhibit Dodge-Robertson No. 14."

A. I do not consider either of said exhibits as showing practical off-bearing internal scrap passages, for in a series of experiments that I made in a bretzel bakery in the presence of Mr. Edson, counsel in this case, Mr. P. T. Dodge, who I believe has already testified in this case, Mr. Gohl (a baker) and his two workmen, whose names I do not know, I found that the two holes that appear in the letter "B" and the holes in the character "&" did not carry away the material separated, or partly separated, from the dough, but simply accumulated in said holes until the dough became compacted in said holes so hard as to form, in effect, a solid punch, which required considerable effort to remove, which had to be done by a stick or something similar. When first commencing to use these instruments, one or two of the holes would be cut out as shown, for instance, in No. 3 in "Exhibit Dodge-Robertson," but as the dough accumulated in the holes, it became so hard that no more dough could be forced into them, and they became, in effect, solid punches, as I said before. In the course of the experiments I made the piece "No. 14," which shows that the cutter took a piece from the top of the character "&," marked "A," a little more from the character marked "B," a little more from the character marked "C," and that in mak-

ing the character marked "D," the pieces taken from the other characters united with the dough in the centre of the upper loop of the character "D" and remained sticking there, as shown in said character "D." Several other specimens were made there at that time, by Mr. Dodge and myself, which conclusively showed that the holes shown in the exhibits 14 and 15 are not practically off-bearing scrap passages; for although, when first tried, they would take out the scrap until sufficient accumulated in the holes to stop them up, in no instance during our experiments did any of the scrap pass up through the top of said holes, and I do not, therefore, consider said exhibits as having practical off-bearing internal scrap passages.

Q. 6. From the appearance of "Defendants' Exhibit No. 14" and "Defendants' Exhibit No. 15," and any examination which you have made of them, please state how old they appear to be, and how much they have been used, if at all, giving your reasons for any opinion you may express.

A. I cannot say exactly how old they are, but they are certainly of recent make. I should say they are not more than a year old, and may be much less. The various parts where they have been filed in process of manufacture are comparatively bright. The rubbing surfaces show no signs whatever of wear, and they appear to be almost as fresh looking as if they had just left the shop of the machinist, more especially the one made for the character "&." That made for the character "B" is a little more discolored than the other, but is not sufficiently discolored to show that it has been used to any extent. Had said models been used to any extent, they would have shown signs of wear on the rubbing surfaces, the crevices would have become filled with dough or flour, of which there appears no sign on the exhibits, excepting some which now appears in the holes in the letter "B" and character "&," which is the remains of

material left in the holes at our recent experiments referred to in my previous answer.

Previous to the experiments I refer to above, I examined the exhibits Nos. 14 and 15 and took them apart and found in the holes formed in the loops of the letter "B" some metal filings, which I here produce, and request that they be marked "Filings No. 1." In the character "&" I found also some filings and dust, which I here produce, and ask to have marked "Filings No. 2." These filings thus adhering to the inside of the holes or passages shown in the letter "B" and character "&" convinced me that the exhibits 14 and 15 had not been used since they were finished; as otherwise the dough would have cleared out the filings; and it appears to me as if they were recently made for the purposes of this suit.

Q. 7. Have you examined "Defendants' Exhibit No. 7," and do you understand its construction and operation? and state your opinion as to its operativeness and capacity for practical use in cutting bretzels, giving your reasons for any opinion you may express.

A. I have examined said exhibit No. 7, and believe I understand its construction and operation. I do not believe that said exhibit could be practically used for making bretzels, on account of defects in construction, which would cause the dough to stick in the crevices between the creases and the main dies, and also because the creasers extend too low down, or too near the same plane as the cutting edges of the die, which makes the creases extend too far through the dough, so as to nearly separate the parts of the bretzel, as shown in "Complainants' Exhibit C," which would make the bretzels easily break up and cause a large loss from breakage. For this reason I do not believe that, even if the exhibit would work properly for any length of time, that it would produce merchantable bretzels. There seems to be another objection to the exhibit as a practical

operative bretzel cutter, in the fact that the openings above the off-bearing scrap passages are partially closed by the wooden piece to which the two parts of the die are secured. On the whole, I regard the defendants' exhibit No. 7 as being anything but a practical bretzel cutter, and this is mainly due to the various parts used to cut the dough and to crease the same being made in separate pieces, which allows of the dough getting into the crevices where the pieces are joined, and thus sticking in said crevices and preventing the proper operation of the cutter; and also to the creasers being made so deep as to almost sever the bretzel in two or three places.

Q. 8. Is "Defendants' Exhibit No. 7," as constructed, adapted to be used on an ordinary cracker or bretzel machine?

A. I do not consider it adapted to be used on a cracker or bretzel machine without considerable additions to it.

Q. 9. Have you examined "Defendants' Exhibit No. 2," and do you understand its construction and operation? and state your opinion as to its operativeness and capacity for practical use in cutting bretzels; also whether it has ever been used practically for cutting bretzels, giving your reasons for any opinion you may express.

A. I have examined "Defendants' Exhibit No. 2," and believe I understand the way it was intended to operate. As to its capacity for cutting bretzels, it is my opinion that a bretzel could not be cut with it in the ordinary way of cutting bretzels or crackers, or in the way it was intended to be used, viz., by pressing said exhibit upon a sheet of dough on a table or endless apron, because the central dies extend about one-tenth of an inch below the outer or main die, which would thus prevent said outer or main die from cutting the dough through, in consequence of which the bretzel proper would not be separated from the main scrap or sheet of dough, but would be united thereto all around

its edges by dough of the thickness of about one-tenth of an inch, or equal to the difference between the depth of the cutting edges of the inner and outer dies. For this reason, if for no other, said exhibit is not an operative device for cutting bretzels. I do not believe that said exhibit was ever used for the making of bretzels, for, in addition to the reason given above, the exhibit shows no sign of ever having been used. The parts are rough and unfinished, and had the device been used for making bretzels, the dough or flour would have adhered to some part of it, especially in the crevices in the inside of the inner dies. The exhibit has to me the appearance of having been commenced as an experiment and then abandoned for some other cutter which it might have been thought would be better for the purpose. At all events, I am very confident that said exhibit No. 2 was never practically used.

Q. 10. Assuming that dies similar in construction to those shown in defendants' exhibits Nos. 14 and 15 were made and used before the date of the invention covered by complainants' patent sued on, would you say that inventive genius, or only ordinary mechanical skill, was required to make the construction and combination and adaptation of the devices covered by complainants' patent No. 274,264, giving your reasons for any opinion you may express.

A. Taking into consideration that the manufacture of bretzels and that of ordinary crackers or fancy crackers and cakes are two different things; that bretzel dough is different from that used for making crackers and cakes; that the bretzel dough cannot be floured to prevent sticking, which can be done with cracker and cake dough; that the manufacture of bretzels is usually a different branch of the baking business from that of baking crackers and cakes; and taking into consideration the fact that the complainants were the first to conceive the idea of making bretzels by machinery that should imitate the appearance of the hand made

bretzel, and at the same time make a stronger bretzel that would not be so easily broken, and then devise a cutter that should accomplish this, I believe that it took inventive genius, or something more than ordinary mechanical skill to produce the devices shown and covered by complainants' patent No. 274,264.

Q. 11. Have you had any experience which especially fits you to testify in this cause, in addition to the qualifications of a mechanical expert in general?

A. I think my experience in my father's bakery in my youth where I worked four or five years, until I was about 15 years old, especially fits me to testify in this case. And further than this, I have frequently noticed the operations of cracker machinery in a cracker bakery in Beekman street, New York, where I was a frequent visitor. Moreover, I frequently had occasion to make examination of the state of the art of this particular branch of invention, and as a solicitor have obtained patents for inventions in this line.

Q. 12. Exclusive of complainants' patent, No. 274,264, can you state how many American patents have been issued for bretzel machines, and if so, give references thereto, and state where you obtained your references?

Objected to by Mr. Banning, of counsel for defendants, as immaterial and incompetent.

A. I made an examination of the portfolios of drawing in the Patent Office, containing machines of this class, and found the following, besides complainants' patent, No. 274,264.

Lampert and Heber	Nov. 28, 1876,	No. 184,786.
" " "	May 6, 1879,	" 215,006.
Appel,	Sept. 2, 1879,	" 219,196.
Huber,	Jan. 27, 1880,	" 223,917.
Lampert and Huber,	Feb. 10, 1880,	" 224,446.
Keller and Myers,	May 15, 1883,	" 277,573.
Legesser,	Aug. 21, 1883,	" 283,522.
Lampert,	Feb. 12, 1884,	" 293,336.

These were all I could find after a careful search in the official portfolios of the Patent Office, excepting the complainants' patent, No. 274,264.

Q. 13. Exclusive of the patents issued to Lampert and Huber and Huber, the associates of the complainants, Messrs. Butler Earhart and Crawford, how many U. S. patents, if any, were issued to other inventors before the date of the complainants' patent?

A. Only one, viz., that granted to Apple, Sept. 2, 1879, No. 219,196.

Cross Examined by Mr. Banning, of counsel for Defendants.

X Q. 14. As I understand you, you have not worked in a bakery for about 36 years. Is that correct?

A. It is.

X Q. 15. During the time you worked in your father's bakery, did you ever help in the actual work of mixing and baking?

A. I did, frequently.

X Q. 16. Do you consider that your experience at that time was such as to enable you to say now that you are a practical baker?

A. I consider my experience at that time to be such as would enable me now to go into a bakery and make many varieties of goods made at that time, such as fancy crackers and biscuits, although it is probable that at this date I may have forgotten many of the receipts.

X Q. 17. Were bretzels known or manufactured at the time you worked in your fathers' bakery?

A. They were not known to me at that time, and I never made any or saw them until within twenty years, to my knowledge.

X Q. 18. Have you ever seen them manufactured?

A. None, excepting those in the bakery where I made

the experiments with the models referred to in my previous answers.

X Q. 19. Then your only actual knowledge or information as to the way in which they are manufactured is what you derived from those experiments, or from persons at that bakery at the time they were made?

Objected to, because the witness has not stated that as the only source of his information on the subject.

A. If by the term "actual knowledge" you mean what I have personally seen of the manufacture of bretzels, I have no other actual knowledge than that obtained at the bakery referred to, and at the time stated.

X Q. 20. So far as you know, how long have cakes, crackers, and similar goods, been cut by dies into different shapes, such as letters of the alphabet, shapes of human beings, birds, animals, rounds, ovals, half rounds, squares, diamonds, etc.?

A. The various shapes you have referred to, with the exception of the letters of the alphabet, have been cut to my knowledge as long as I can remember, but the letters of the alphabet are comparatively new to me. I do not remember seeing them over a year or so, if as long as that.

X Q. 21. But they may have been made in this way and sold generally in the market, for say the last 10 or 15 years, without your happening to see or know anything about it?

A. They may.

X Q. 22. As I understood you, you say that the internal off-bearing scrap passages in these two dies, offered by the defendants as exhibits 14 and 15, were too small to carry off the scrap in the experiments which you witnessed at William Gohl's bakery in this city?

A. They were.

X Q. 23. Was this the only objection to these scrap passages.

A. That was all that I could see.

X Q. 24. This being the case, do you think it would require anything more than the ordinary skill of an ordinary mechanic to enlarge those passages so as to make them, say, a half an inch or an inch in diameter?

Objected to by Mr. Edson, counsel for complainants, as not proper cross-examination, the witness not having stated in chief that said exhibits show off-bearing scrap passages, nor that the *mere* enlargement of an aperature constitutes invention where no new result is obtained.

A. I think it would be very difficult for an ordinary mechanic to make passages large enough in those dies to carry off the scrap without making them so large as to destroy the letter, or prevent the operation of the clearers. Of course, it would not require invention to simply make a hole larger where there was material or space enough to allow of its being made larger.

X Q. 25. Would it have required anything more than the ordinary skill of an ordinary mechanic to enlarge either of those dies to the size or double the size of this bretzel cutter marked "Complainants' Exhibit A," the scrap passages and other parts being enlarged proportionately?

A. It would not.

X Q. 26. Being thus enlarged, what would be the diameter of the scrap passages in these exhibits 14 and 15?

This question and the preceding question and answer are objected to by Mr. Edson, counsel for complainants, as not competent cross-examination, not being responsive to the examination in chief.

A. If enlarged to about the size of "Complainants' Exhibit A," the smallest hole in the character "&" would be about twice the diameter it is now, or about $\frac{5}{16}$ of an inch,

and the largest hole in the same would be $\frac{7}{16}$ of an inch. If we double the size of exhibit "A," the holes will be double the diameter given above—that is to say, $\frac{5}{8}$ of an inch for the smallest hole, and $\frac{7}{8}$ of an inch for the largest. With reference to the exhibit 14, if that was made the size of exhibit "A," the holes through the centre of the loops of the letter would be about a quarter of an inch one way, and three-quarters of an inch the other. If enlarged to double the size of the exhibit "A," the holes referred to would be half an inch in one direction, and one inch and a half in the other.

Adjourned at 5:30 P. M., to meet again at the same place at 10 A. M., Saturday, March 8th, 1884.

JOSEPH FORREST,
U. S. Commissioner.

Met pursuant to adjournment, at the time and place stated, this March 8th, 1884. Present, respective counsel as before.

Cross Examination of the witness Robertson resumed by Mr. Banning.

X Q. 27. If enlarged to the size, or double the size, of exhibit "A," as above stated, would there be any difficulty in using these dies, defendants' exhibits 14 and 15, in cutting dough of the kind you experimented with at the bakery above mentioned?

A. I do not think there would. But I think that with the smallest enlargement mentioned, the smallest hole in the character "&" might still become clogged up.

The foregoing question was objected to by Mr. Edson, of counsel, because presenting only a hypothetical case, the answer to which might require experiments.

X Q. 28. If enlarged to the size of exhibit "A," would not the only difference between these exhibits 14 and 15

and exhibit "A" be in the shape or configuration of the several parts of the dies respectively?

A. So far as mechanical construction is concerned, they would be very similar. I notice, however, that the off-bearing scrap passages in the exhibit "A" are enlarged above the cutting edges, so as to allow of the material more readily passing through, which does not appear to have been done in defendants' exhibits 14 and 15.

X Q. 29. Have not flaring shapes, such as those in these scrap passages of exhibit A, which you have referred to, been long and universally known and used, say as a mere mechanical expedient, whenever and in whatever considered necessary?

A. Such passages have been long known and used with flaring sides.

X Q. 30. Then nothing more than the ordinary skill of an ordinary mechanic was required in the making of these scrap passages with flaring sides?

A. If the complainants' exhibit A had originally been made with the scrap passages having parallel sides, it would not have required anything more than the ordinary skill of an ordinary mechanic to make them flaring. But to take the defendants' exhibits 14 and 15 in their present condition, it would be difficult to enlarge the alleged scrap passages, and yet leave them sufficiently strong to stand the great pressure required in their operation.

X Q. 31. My question was a simple one, and did not call for any opinions in reference to exhibits 14 and 15; but since you have volunteered them, I will ask you how much "the great pressure required in their operation," as to the scrap passages, is?

A. I could not undertake to say the exact amount of pressure required, as it would require experiment to determine, and would vary with the different kinds of dough used. I did not mean to imply by the term "great pres-

sure" that the mere cutting of the dough would take a very great pressure, but to be sure to always cut through the dough, it is necessary that the cutters should not only pass through the dough, but should have sufficient force exerted upon them to drive the cutters firmly down upon the resisting medium below it, which I believe is usually a belt of canvass or some similar flexible material, although cutters are sometimes employed where, after passing through the dough, they come in contact with wood or some solid resisting medium, and it is necessary that the cutters should strike the belt, or wood, or whatever the resisting medium may be, with considerable force, so as to always be sure to cut through the dough.

X Q. 32. In other words, taking up the subject of the pressure to be exerted on the dies generally, you now mean to take back your statement entirely, contained in your voluntary statement above referred to, that a "great pressure" is exerted on the sides of the scrap passages?

Objected to by complainants' counsel, Mr. Edson, because it assumes that the witness has retracted a part of his statement, which he has not done, but simply given the grounds more fully upon which his statement was based.

A. I by no means take back my statement, but I simply explained more fully what I meant. I merely made the explanation that I did in my last answer, that my previous answer might not be misunderstood; for it is possible, without my explanation, that my answer might be understood to mean that a simple cutting of the dough required great pressure. What I meant to imply was that it was necessary to exert great pressure upon the cutter in its operation, as otherwise it would not always perforate the dough.

X Q. 33. How great pressure is required, according to your best knowledge or judgment, in the ordinary operation of these dies, say like complainants' exhibit A or defendants' exhibits 14 and 15?

A. In my experiments with complainants' exhibits 14 and 15, it took all the power I could well expend upon them to cut through the dough, by pressing down on the large plate with my hands. I remember when cutting out crackers and similar articles in my younger days, that it took a very smart and rapid blow to cut out small crackers with a hand cutter, so much that it soon made my arms and hands tired, and I had to stop to rest frequently, but I cannot give anything near an approximate estimate as to the actual force exerted in using such dies as referred to in the question.

X Q. 34. Returning now to the subject previously enquired about, do you think it would require anything more than the ordinary skill of an ordinary mechanic to make internal scrap passages of any size, shape or thickness of shell desired?

Objected to by complainants' counsel as assuming that complainants' invention consisted in applying an already known device to a bretzel cutter, and ignoring the fact that the bretzel cutter, as a modified and new structure, is the real subject of their invention.

A. The mere making of internal scrap passages, of any size, shape or thickness of shell desired, would not, at the time of complainants' invention, require anything more than the ordinary skill of a mechanic, but to combine such internal scrap passages with the other elements to produce a new and useful result, might require invention.

X Q. 35. Look at these cuts or illustrations on page 49 of J. W. Ruger & Co.'s illustrated catalogue, "Defendants' Exhibit No. 12," and on page 43 of Roth & McMahon's catalogue, "Defendants' Exhibit No. 13," the first illustration being marked "10 years or over old, J. R." and the second "4 years old, J. R.," and state whether or not the dough is creased by the dies used in cutting such shapes respectively.

A. The cuts referred to appear to be designed to produce fancy borders on crackers, but there is nothing in said illustrations or the descriptions thereof to show whether said borders were creased simply or whether they were cut through. I remember using a cutter in my youth for cutting fancy biscuits or crackers, where a somewhat similar effect was produced, in which the parts of the cutter that made the creases penetrated right through the dough.

X Q. 36. Are you not snfficiently familiar with bakers' goods and the use of bakers' tools to say whether the two cuts above referred to show borders "creased simply," or whether the dough has been cut through?

A. In the course of my experience in examining patents, I have learned to distrust drawings without full descriptions, as they are liable to be mistaken, and I do not like to give a positive answer based simply on drawings, and especially such in which there is no necessity for accuracy; and I therefore hesitate to give a positive answer to this question. It is possible that said borders may be designed to show devices for simply creasing the dough, and again it is possible that the particular borders referred to may be made by cutters that cut partially or entirely through the dough.

X Q. 37. The cups or inside cutters of these dies defendants' exhibits Nos. 2, 7, 14 and 15, are made removable, are they not, and what is the purpose or object of this?

A. They are made removable. I believe the object is for the convenience of the manufacturer, in the first place, anp there may be a second object, so that a part of the die may be removed and replaced, in case of damage, without throwing away the whole die.

X Q. 38. The constant use of these dies and the pressure exerted upon them has a tendency to wear out or dull the cutting edges?

A. It does; and it may be one of the objects of the

manufacturer in making them in separate pieces in order that they may be more readily sharpened.

Re-Direct Examination by Mr. Edson.

R-d. Q. 39. Please read defendants' testimony of Jacob Roth, beginning at cross-question 40 and ending at cross-question 43, and state whether the twists constructed as therein described represent simply indentations or impressions upon the face of the dough, or would they make an impression that would represent the dough as cut and folded upon itself.

A. They simply represent indentations or impressions upon the face of the dough, and do not represent the dough as cut and folded upon itself.

R-d. Q. 40. Please compare defendants' "Exhibit No. 2" with complainants' "Exhibit A," and point out the differences in construction.

A. I find on comparing the two exhibits that defendants' "Exhibit No. 2" has several parts missing, exterior of the die proper. The cross-piece that should be at the top, the springs for expelling the bretzel after being cut, and one of the internal dies are missing. I find that the defendants' "Exhibit No. 2" differs also in construction from complainants' "Exhibit A," the die proper or cutting portion being made in three or four pieces, while in complainants' "Exhibit A" the die is made of one piece only. I say that in defendants' "Exhibit No. 2" the die is made in three or four pieces, for it is rather uncertain whether the third internal die is cast with or separately from the other internal dies.

R-d. Q. 41. Might there be any advantage, in constructing dies for cutting bretzels, in having the creasers and cutting edges of the die cast in one piece?

A. There would, decidedly, especially where parts of the die come together, as they necessarily do where the

creasers are employed, for otherwise the dough is apt to stick in the crevices formed by the junction of the different parts of the die and thus form a hindrance to the proper operation of the die and cause it to do imperfect work. Besides this, the internal and external dies form braces for each other and thus strengthen the dies as a whole.

R-d. Q. 42. Are you aware that internal scrap passages, one or more, with or without flaring sides, were in use in the manufacture of bretzels, crackers, cakes, etc., before the date of complainants' patent?

A. I am not, and do not believe they were. I regard them as new in the art of baking.

R-d. Q. 43. In your answer to cross-question No. 34, please state whether you had dies for cutting dough especially in view, or were referring to mechanical appliances and implements generally.

A. In the first part of my answer I had reference to mechanical appliances generally, and more particularly to such devices as wad punches, in which the wads are cut by cutters having slightly flaring sides.

R-d. Q. 44. May not the letter "B" be manufactured by a die not having practical off-bearing scrap passages?

A. It might, as solid punches might be used to produce the openings in said letters.

R-d. Q. 45. Does not a proper definition of invention include new and useful results, and does not the gist of invention frequently consist in applying and adapting old principles or devices to practical use, whereby a particular trade is improved?

A. It does.

T. J. W. ROBERTSON.

Subscribed and sworn to before me, this 8th day of March, 1884.

JOSEPH FORREST,
U. S. Commissioner.

WILLIAM GOHL, a witness produced, sworn and examined on the part of the complainants, deposes and testifies as follows, in answer to questions by Mr. Edson, of complainants' counsel:

Q. 1. What is your name, age, occupation and place of residence?

A. William Gohl; 30 years; baker; 616 O St., N. W., Washington City, D. C.

Q. 2. What class of goods do you manufacture principally?

A. Bretzels.

Q. 3. How much experience have you had in the manufacture of bretzels?

A. Twenty years' experience—fourteen years of this time at my father's bakery in Harrisburgh, Penna., and six years in my own bakery at Washington, D. C.

Q. 4. Is the art of baking bretzels included in the ordinary training and practice of an apprentice to to the trade of baking crackers, cakes, bread, etc., or does it require special training, and is it regarded as a distinct and special branch of the bakery business?

Objected to, as irrelevant, incompetent, and leading, by defendants' counsel.

A. It is not so included, and it does require special training, and is regarded as a special branch of the business.

Q. 5. Explain briefly the process of manufacturing bretzels.

A. In the first place, it takes a firmer dough than bread dough, and requires only one fermenting and process, while bread requires four. Bretzels are boiled, bread is not. Bretzels are salted after boiling, then baked. That is all as to the process of baking bretzels.

Q. 6. In what are bretzels boiled?

A. In soda. The balance is a secret of my own.

Q. 7. Do you mean that your process practiced in your

bakery includes something more than the ordinary process known to the trade?

A. Yes.

Q. 8. Do you understand the construction and operation of complainants' "Exhibit A," now shown you? and if yes, state whether you have ever seen or heard of a bretzel cutter having internal off-bearing scrap passages, substantially such as those shown in said exhibit.

A. I do understand it. I have not.

Q. 9. How will hand made bretzels compare with bretzels made by machinery, such as now shown you, marked "Complainants' Exhibit F," in their carrying quality—that is, in their manufacture and transportation, would breakage be greater in one than in the other?

A. There would be more breakage in hand made bretzels in manufacturing than there would be in machine made ones. There would be a difference of about one-third—that is, about one-third more would break in the hand made than in the machine made bretzels.

Q. 10. What would you say as to the bretzels shown in "Complainants' Exhibit C" being a merchantable article, giving your reasons for any opinion you may express?

Objected to, as immaterial and incompetent.

A. In the first place, it is creased too deep in the twist; in the second place, there is not enough dough in the twist to make it firm.

Q. 11. What would you estimate to be the percentage of breakage in the manufacture and transportation of bretzels, constructed like those shown in "Complainants' Exhibit C," when prepared for market by the usual process of manufacturing bretzels?

Objected to, as immaterial and incompetent.

A. About one-half.

Cross Examined by Mr. Banning, of Defendants' Counsel.

X Q. 12. Your last answer is simply a guess, is it not?

A. No, sir; there was no guess in that. I could show the difference in hand made bretzels in the breakage, in the weak point in the twist, that they would not stand handling after boiling.

X Q. 13. I am not asking you about hand made bretzels, but about bretzels like those contained in this box "Complainants' Exhibit C." Have you ever handled any bretzels of this kind?

A. No, sir.

X Q. 14. Then how do you know that probably one-half of them would break while being manufactured or shipped? Is not this a mere guess or conjecture on your part?

A. By being creased too deep in the twist, being too weak outside of the twist. Being positive that they will break before baking.

X Q. 15. You say there is a difference between bretzel dough and dough used for other goods?

A. Yes, sir.

X Q. 16. Is there not also a difference between biscuit dough and dough used for other goods?

A. There is.

X Q. 17. And is not this true also of both cake dough and cracker dough?

A. It is.

X Q. 18. Is there any more difference between biscuit dough and bretzel dough, than there is between biscuit dough and cake dough?

A. No, sir.

X Q. 19. Is there any more difference between cake dough and bretzel dough than there is between cake dough and cracker dough?

A. No, sir.

X Q. 20. Is there any more difference between cracker dough and bretzel dough than there is between cracker dough and biscuit dough?

A. Yes, sir; cracker dough has no yeast or ferment in it, while bretzel dough has.

X Q. 21. Do not the doughs used for making bread, biscuits and bretzels all have yeast in them?

A. They all have yeast in them.

X Q. 22. Are not stiff or firm doughs used for making other goods than bretzels?

Objected to by complainants' counsel, as incompetent on cross-examination, not being responsive to examination in chief; this objection to apply to all previous questions as to difference in doughs not referred to in the examination in chief.

A. Yes, sir.

X Q. 23. Is there any more difference between the process of making bretzels and other goods, than there is generally between the several processes of making various other kinds of bakers' goods?

A. Yes, sir.

X Q. 24. In what respect?

A. Every baker has a different receipt.

X Q. 25. Do you manufacture bretzels by hand or by machinery?

A. By hand.

X Q. 26. Which do you consider the better, hand made or machine made bretzels?

Objected to as not responsive.

A. Hand made.

X Q. 27. Why?

A. I decline to answer that.

X Q. 28. Have you ever desired to buy or use new kinds of machinery in your bakery?

A. I have.

X Q. 29. Have you ever tried to manufacture bretzels by machinery?

A. No, sir.

X Q. 30. Have you ever been in bakeries elsewhere than in Harrisburgh and this city?

A. I have, but not worked in them.

X Q. 31. Have you ever noticed particularly as to the kinds of machinery used in other bakeries than yours and your father's?

A. No, sir.

X Q. 32. How large a bakery have you?

A. A medium sized one. I work four hands in the bretzel season.

X Q. 33. Have you ever worked in the manufacture of other goods, such as biscuits, cakes, crackers, etc

A. I have worked in the making of bread and cakes.

X Q. 34. Have you ever used dies for cutting different shapes in the making of bread and cakes?

A. No, sir.

X Q. 35. If informed that dies could be practically used for cutting different shapes in the making of cakes and crackers, say, such shapes as the different letters of the alphabet, different animals, or birds, diamonds, squares, etc., would you not see at a glance that such dies of proper shape could be used for the cutting out of bretzels?

A. No, sir; not before trial.

X Q. 36. If such dies had been used for cutting biscuits, could you tell before trial whether they could be used for cutting cakes or crackers?

This question and the preceding one objected to as not responsive to the examination in chief.

A. No, sir.

X Q. 37. If they had been used for cutting crackers, could you tell before trial that they could be used for cutting cakes?

A. I could, according to the kind, that is, as to some I could, and as to some I could not.

X Q. 38. Would it be any more difficult to determine whether such dies could be used for cutting bretzels, than to determine whether they could be used for cutting other forms, say of cakes or crackers, after they had been previously applied to some other particular kind of goods?

Objected to as immaterial and incompetent on cross- examination.

A. I could not tell, I have never seen it tried.

X Q. 39. Did you ever see a bretzel cutter of any kind in use?

A. No, sir.

Re-Direct Examination.

R-d. Q. 40. Have you now or have you had under consideration the purchase of a bretzel machine?

A. I have now, provided the machine makes cuts satisfactorily.

R-d. Q. 41. Would you regard the bretzels shown as "Complainants' Exhibit F," a good, merchantable article?

A. Yes, sir.

R-d. Q. 42. What is your reason for refusing to answer cross-question 27?

A. For personal reasons.

R-d. 43. Q. Is the breakage of hand made bretzels in the course of manufacture due in whole or in part to the fact that the ends thereof project over the bow, or in other words, do such projecting ends materially increase the breakage of hand made bretzels?

A. They do in some cases.

R-d. Q. 44. What proportion of hand made bretzels are broken in the usual course of manufacture thereof in in large establishments?

A. About ten per cent.

R-d. Q. 45. Are you a machinist or mechanical expert?
A. No, sir.

WM. GOHL.

Subscribed and sworn to before me this 8th March, 1884.

JOSEPH FORREST,
U. S. Commissioner.

DISTRICT OF COLUMBIA, SS.

I, Joseph Forrest, a United States Commissioner, in and for the District of Columbia, do hereby certify that at an examination of witnesses began and held on the 6th day of March, 1884, and continued daily thereafter to and including this the 8th day of March, 1884, I took the written depositions of Philip T. Dodge, Thos. J. W. Robertson and Wm. Gohl, witnesse6 on behalf of the complainants in a certain cause pending in the Circuit Court of the United States for the Northern District of Illinois, wherein Theo. H. Butler, *et al.* are complainants, and Geo. Steckel *et al.* are defendants, in chancery, and that said depositions were by me read to the witnesses, and by them subscribed in my presence, after being taken down by me from their statements, said witnesses having been by me first duly sworn to testify the truth, the whole truth and nothing but the truth touching the matters at issue in said cause. And that testimony was taken by consent at the office of Edson Brothers, 917 F. St., N. W., Washington, D. C., on the dates stated, in the presence of counsel for complainants and defendants, said counsel being Messrs. Jos. R. Edson and Ephraim Banning, respectively. And further, that I am not of counsel for any of the parties to said cause, or in any manner interested therein. Witness my hand and official seal this March 8th, 1884.

[SEAL.]

JOSEPH FORREST,
U. S. Commissioner.

Fees, $9.00, paid.

Proofs for rebuttal on final hearing taken on the part of complainants, before me, Gilbert H. Stewart, a notary public in and for Franklin county and state of Ohio, by consent.

Present—Joseph R. Edson, Esq., counsel for complainants; Thomas A. Banning, Esq., counsel for defendants.

It is consented by counsel for the respective parties that testimony for final hearing on the part of complainants may be taken before Gilbert H. Stewart, a notary public in and for Franklin county and state of Ohio, with the same force and effect as if he were duly appointed by the court a Special Examiner in the cause.

Mr. Edson offers in evidence, on behalf of complainants, a copy duly certified by the Commissioner of Patents, from the records of the United States Patent Office, and the same is filed and marked, "Complainants' Exhibit A, Dec. 31, 1878. Gilbert H. Stewart, Notary Public."

Also, a copy duly certified by the Commissioner of Patents, from the records of the United States Patent Office, and the same is filed and marked, "Complainants' Exhibit B, Jan. 10, 1879. Gilbert H. Stewart, Notary Public."

Also, a copy duly certified by the Commissioner of Patents, from the records of the United States Patent Office, and the same is filed and marked, "Complainants' Exhibit C, July 21, 1879. Gilbert H. Stewart, Notary Public."

Also, a copy duly certified by the Commissioner of Patents, from the records of the United States Patent Office, and the same is filed and marked, "Complainants' Exhibit D, July 21, 1879. Gilbert H. Stewart, Notary Public."

Also, a copy duly certified by the Commissioner of Patents, from the records of the United States Patent Office, and the same is filed and marked, "Complainants' Exhibit E, Nov. 20, 1882. Gilbert H. Stewart, Notary Public."

Also, a copy duly certified by the Commissioner of Patents, from the records of the United States Patent Office,

and the same is filed and marked, "Complainants' Exhibit F, Jan. 31, 1883. Gilbert H. Stewart, Notary Public."

GEORGE W. EARHART, being produced, sworn and examined on behalf of complainants, testified as follows, in answer to interrogatories propounded by Mr. Edson:

Q. 1. State your name, age, place of residence and occupation.

A. George W. Earhart; my age is 49 years; I reside in Columbus, Ohio; I am engaged in the manufacture of grocers' goods and machinery.

Q. 2. Are you one of the complainants in this cause, and one of the joint inventors of the patent sued on?

A. I am.

Q. 3. Have you heretofore testified in this case?

A. I have.

Q. 4. Please give a brief history of the conception, development and reduction to practice of the invention sued on in this cause.

A. In 1879, while we were working on and experimenting with a machine which we bought of Lampert & Huber, it occurred to me that a bretzel machine could be made to cut out bretzels on a flat surface, at a cost comparatively small compared with that of the Lampert & Huber machine. I talked the matter over with Mr. Crawford and Mr. Butler, and during that time I made a drawing showing the face of the dies to be used in a machine of that character—that is, a machine that would cut out bretzels on a flat surface. In this drawing I failed to get the end and side creasers, to properly make the twist of the bretzel. Afterwards, and during the same year—that is, in 1879—I made other drawings, endeavoring to get at what would make a proper die for the purpose, but did not get the creasers and grooves in such shape that would make the proper die and show the twist. These small drawings were thrown aside as useless. In March, 1880, we partially

made another drawing, which was completed within a few days thereafter, showing the face of the die with the creasers substantially as shown in the patent sued upon.

Q. 5. Please examine the sketch now handed you, and state what it is and when it was made.

A. It was made as stated in my last answer, and is the sketch of a bretzel die contemplated to be used substantially the same as that described in the patent sued upon.

Such sketch is offered in evidence, and filed and marked, "Complainants' Exhibit First Sketch. Gilbert H. Stewart, Notary Public."

Q. 6. Please describe the construction of said "First Sketch."

A. It is constructed in the shape of a bretzel, showing the bows, the loop, twist, and the off-bearing internal scrap passages.

Q. 7. Did you make any other drawing, in the development of the invention in contest? If so, please produce and identify it, and state when it was made, and by whom.

A. I made another drawing in March, 1881, showing the cutter frame, dies complete, the springs, clearers, and the base, substantially the same as those now used in making a cutter or machine under the patent here sued upon. This drawing was taken to a draughtsman and a copy made from it by him, which was intended to be used in applying for a patent for our machine. The drawing made by the draughtsman as above I here produce, and the same is filed and marked, "Complainants' Exhibit, March, 1881, Copy. Gilbert H. Stewart, Notary Public." This drawing made by the draughtsman as above was sent to Washington, D. C., to my solicitor, Mr. Edson, and from it and the accompanying description the drawings and specifications were made, which accompanied the application for the patent, and this copy was returned to us. In March, 1882, we ordered a model made, representing the cutter sued upon,

which was finished in a few weeks afterwards, and was also sent forward and accompanied our application for a patent. During the years 1879, 1880 and 1881 we were experimenting with dies, and with the machine purchased of Lampert & Huber, to perfect and develop their patent machine, as well as the patent machine sued upon in this cause. During the spring of 1882 we commenced work on the machine represented in the patent sued upon. This machine was completed in May, 1882, and was put to practical use in making bretzels in our shop as soon as it was finished.

Q. 8. About how many sketches other than the three particularly referred to in your testimony were made from time to time and which you have not produced before the completion of the invention ?

A. In addition to those mentioned there were two or three small sketches made in 1879, and possibly in the fore part of 1880, in endeavoring to get creasers to show the twist.

Q. 9. State how many creasers are represented in complainants' exhibit, marked "March, 1881, copy." Describe their location and relative position with reference to the cutting edges of the dies.

A. There are five creasers represented, two side creasers, one central creaser and two end creasers. The side creasers and the central creaser are located in and connected with the twist. The end creasers are located on the top of the bow at the points where the loops are connected with the bow. The creasers do not extend out flush with the cutting edges of the die, but only far enough to make the impressions on top of the dough of sufficient depth to remain and be shown when the bretzel is baked.

Q. 10. Is it a fact, as you have heretofore testified, that all sketches, models and drawings made in the course of the devolopment of the invention, were the subject of con-

sideration by yourself and co-inventors, and the result of mental suggestions and interchange of views?

Defendants' counsel objects to the question as leading and suggestive.

A. In getting at how the machine was to be constructed, we talked the matter over frequently and each one made suggestions. Mr. Crawford made part of them and I made part of them. Mr. Butler was consulted and made suggestions as to how it could be made a practical machine.

Q. 11. Can you state any particular points that were suggested by yourself and your co-inventors? If so, please do so.

A. The flat two-edged cutting and moulding die to cut on a flat surface was suggested by myself. Mr. Butler made suggestions as to the grooves, how they should be made and as to their depth, and as to the clearers, and as to the perforated plate D. Mr. Crawford suggested how the off-bearing scrap passages should be made, and in a general way as to the other parts of the machinery.

Q. 12. Were any other experimental dies or models made than those heretofore referred to in your testimony? If so, produce and identify them; and state when they were made and the circumstances attending their construction.

A. There was a wooden die made, a rough wood die; it was made a short time after the making of the sketch herein filed, marked "Complainants' Exhibit First Sketch." The wood die was thrown aside and lost and I cannot produce it. There was also a metal die made as an experimental model. This metal die I here produce, and the same is filed and marked, "Complainants' Exhibit Brass Cutter. Gilbert H. Stewart, Notary Public." This metal cutting die was made some time previous to our commencing the work on our machine, made in accordance with our

patent sued upon, what length of time previous to that, I am unable to state precisely.

Q. 13. How much did you and your partners and co-inventors expend in constructing bretzel machines before you were able to make a practical working machine? Please state generally for what purposes the money was expended, giving names of parties employed and amounts paid.

A. We embarked in the business in 1879, in January, about the first day, buying an interest in the Lambert & Huber patents and their machine.

Counsel for defendants here objects to any evidence about other machines than the one covered by the patent in suit as incompetent and immaterial.

We set up this machine purchased of them and operated it for experiment. We then had drawings made in accordance with their patent, took them down to New York city and put them into the hands of the most experienced and skilful workman in that branch of machinery that we knew in this country, and engaged them to build us a bretzel machine. They claimed that they could build a perfect working machine within a few months. They worked at it a year and finally turned us out a machine. Up to that time—that is—to the time when that machine was finished, we were at an expense in round numbers of four thousand ($4,000) dollars. The machine was a failure. We went on to improve and build others, until finally, in February, 1882, we had a machine perfect in all its parts and ready to put upon the market, at which time we had been at an expense of about eight thousand ($8,000) dollars, besides the time devoted to it. The whole amount up to this date expended on the patent machines, in time, material and money, is computed at over thirty thousand ($30,000) dollars. The principal items that go to make up that amount are for amount expended for building machines, money paid to

Lampert & Huber for assignments of their patents, our own time devoted to this business of building and improving machines, taking out of patents, attorneys' fees. The amount paid to Lampert & Huber for the assignment of their patents was about twenty-eight hundred ($2,800) dollars. About seven thousand ($7,000) dollars of the total amount was for our time devoted to the business; amount paid for attorneys' fees about one thousand ($1,000) dollars. The balance of the gross amount was paid out for materials and labor in building machines and experimenting in improving them. The seven thousand dollars ($7,000) allowed for our own time devoted to the business covers the entire time we have been engaged in the business, up to this time. Up to the time that the first complete improved machine was ready for the market, the value of our time devoted to the business was about five thousand ($5,000) dollars. the rate of two thousand ($2,000) dollars per annum for the This amount was arrived at by allowing each one of us at time actually devoted to the bretzel machine business. From the above gross amount of thirty thousand ($30,000) dollars expended in this business should be deducted the amount of ten thousand ($10,000) dollars received by us for machines and by way of royalties, leaving the net amount expended by us in developing and experimenting with bretzel machines, twenty thousand ($20,000) dollars.

Q. 14. How much of the thirty thousand ($30,000) dollars was expended in developing and reducing to practice the invention sued on, inclusive and exclusive of the cost of the machine hereafter to be filed and identified as "Complainants' Exhibits New York Machine?"

A. Exclusive of the New York machine, the cost of developing and reducing to practice the invention sued on was about nine hundred dollars ($900); including the New York machine, the amount would be four thousand nine hundred dollars ($4,900). This amount does not include

the time employed in perfecting the patent sued upon. The amounts above stated as expended in developing the bretzel machine are fixed in my mind by reference to our books of items of expenditure made at the time, excepting the amount named as amount for our time devoted to the business.

Q. 15. Please examine the exhibits now handed you, marked "Complainants' Exhibits New York Machine;" state what they are, the cost of the machine from which they were taken, and where said machine now is, also where the dies, as shown in the exhibits, differ in construction from the Lampert & Huber machine and from your machine.

A. These are staves showing the dies taken from the machine made in New York, in reducing to practice the Lampert & Huber patent. The machine is now in our possession; its cost was several thousand dollars; I don't know how many. These dies differ in construction in many respects from our machine described in the patent sued on. First, they are made to work together in forming a bretzel, one making the upper side and one the lower side of a bretzel. The creasers in the lower die are flush with the cutting edge. The end creasers are made in separate pieces and set into the die and are flush with the surface of the cylinder, whereas in our machine, made under the patent sued upon, the creasers extend only about one-half the depth of the die, and if flush with the cutting edge of the die, as in these exhibits, they would cut the bretzel to pieces in the making. The dies in these exhibits also differ from those in the Lampert & Huber machine as shown in their patents, but I am not familiar enough with their construction to explain the difference without comparing them.

Q. 16. How does the present consumption of bretzels compare in quantity with the amount consumed at the time you completed a practical working bretzel machine?

A. The extent of the consumption now is much greater than then—I should say ten times as great. Since the introduction of the machine made bretzel they have become a commercial article and are sold more generally by the grocery trade. This is owing partly to their being produced and sold at a lower price than hand made bretzels, and partly by their being handled by a large baking trade throughout the country, who have placed them upon their catalogues and introduced them to the trade.

Q. 17. When you introduced a practical working Lampert & Huber machine and a practical working machine of your invention, how were they received by the trade, and what, if any, opinions were given to you by bakers as to your being able to make a practical working bretzel machine while you were experimenting?

A. They were well received by the trade everywhere, and with expressions of satisfaction that we had succeeded in perfecting a machine which saved so much labor in the manufacture of bretzels and produced them in such large quantities as our machine did. While we were experimenting, we exhibited a model of the machine made under the Lampert & Huber patents and explained its workings to a large number of the bakers in this country. I believe in every instance where it was shown they expressed their belief that it would be a good thing if it would do what we claimed for it. And I believe every one of them was of the opinion that it wouldn't work and do the work as we claimed it would. The expression was common that bretzels couldn't be made by machinery.

Q. 18. Until the introduction of bretzel machines by you, what position in the trade of baking did the manufacture of bretzels occupy?

A. The manufacture of bretzels occupied a position separate and apart from that of other baking business. Bretzels were made by hand, by persons skilled in the art, who

were known as bretzel bakers, distinct and apart from ordinary bread or cracker bakers. Until that time the trade in hand made bretzels was confined nearly altogether to beer saloons, and they were not known to people at large, and were not considered as important as an article of trade.

And thereupon the further taking of depositions herein was continued until to-morrow morning (April 9) at 8 o'clock.

April 9, parties met pursuant to adjournment. Same counsel present. And thereupon the taking of depositions was continued as follows:

Q. 19. Please state how long you and your co-inventors and partners have been associated together in business. Also give some idea of the extent of your business for the last 10 or 15 years; the number of hands employed; extent and number of shops, etc.

A. Mr. Butler and I have been associated in business for twenty years. Mr. Crawford has been connected with the firm as salesman and partner during all that time. Our business is large and extends all over the country. We do more or less business with the trade in nearly all the states. We usually have from forty to fifty hands employed, part of them in the bakery and part in the confectionery department, and part of them in the spice department, and part of them in the coffee roasting and packing department; part of them in manufacturing and packing extract of coffee; and others as traveling salesmen, office force, warehouse force and home salesmen. We also manufacture our own tin cans used in our business, and all our wooden packing boxes. We have sufficient capital invested in our business to carry it on, and sell the products to a large trade throughout the states. Our goods are well and favorably known to the trade. The shops in our manufactory consist of a large bakery; a room for packing and storing crackers and bretzels; coffee roasting room; two packing

coffee rooms; a wooden box department; tin can manufacturing department; a confectionery shop; baking powder shop; spice manufacturing room; essence of coffee manufacturing shop; a large packing and storage room; a large lumber shed; a large warehouse for storing goods; a large stable and wagon shed.

Q. 20. In computing the value of your time and that of your associates, how does the actual value of your time and their time in the management of your extensive business compare with the amounts charged in computing the cost of reducing the Lampert & Huber machine to practice? And why was such a low estimate made as to the value of your own time?

A. In computing our time spent in developing the bretzel machine business, it was computed at not to exceed one-half of the value and importance of our time in our own business. This low estimate was made in consequence of our being connected with Lampert & Huber, and by contract and agreement with them, as offered in evidence as "Complainants' Exhibit, Dec. 31, 1878," by which all expenses incurred were to be charged up to the bretzel machine business, in which they held an interest. As we did all this work ourselves, we did not want them to think that we were overcharging them for the time employed. No outsider would have been competent to have done this work as we have done it.

Q. 21. How much have complainants expended in advertising bretzel machines, including the Lampert & Huber machines and your own?

A. They have expended for that purpose about five hundred ($500) dollars, which sum is included in the estimate of the whole expense referred to in answer to question 13, the most of which was expended in bringing to notice the Lampert & Huber machine.

Q. 22. Why is it that the cost of developing and reduc-

ing the Lampert & Huber machine to practice is so largely in excess of the amount of time, labor and money expended in reducing your own invention to practice?

A. It is because it was a new and untried field, with nothing to guide us but our own broad judgment and the failures of those who had undertaken to build bretzel machines before us; and because that while we were employed in developing and improving the Lampert & Huber machine, we were at the same time developing and learning how we could make a practical machine as represented in our patent sued upon, which was in contemplation and was a matter of study at the same time. They were carried along together until each was made perfect working machine.

Q. 23. What effect has the introduction of bretzel machines by complainants had upon the bretzel trade?

A. It has increased it largely, and brought the business prominently before a new class of trade, who handle them largely now and did not before. This new trade consists of the large bakers and the grocery trade of the country. Their being sold by the grocers has introduced them largely to consumers who had never before used them, but now buy them for family use.

Q. 24. You have heretofore testified as to how many bretzels can be made in one day on the machine sued on, when worked with a certain number of cups. Please state whether or not the bretzel producing capacity of your machine can be increased; if so, state the possible capacity and productiveness of complainants' machine sued on.

A. The bretzel producing capacity of complainants' machine can be increased by the addition of more cups to the machine, and increasing the speed of the machine, to almost any quantity desired. The quantity, as well as the cost of the machine, can be reduced to correspond with the needs of small bakers. The importance of these machines

is owing partly to the fact that they can be adapted to the use of small bakers, at a very low cost compared with the Lampert & Huber machine. The possible capacity and productiveness of the machine sued upon, made with twelve (12) cups and speeded to 25 revolutions per minute, with the addition of two (2) more hands, would be three hundred (300) barrels of bretzels in a day of ten hours. This machine can be speeded much higher and can be made with more cups, if necessary, but the production would be so great that it could not be taken care of that is to say, that no shop in this country has the capacity to prove, boil and bake them, and that men enough could not get around the machine to handle them.

Q. 25. Have you read defendants' testimony in this case? If so, state what you have to say as to the testimony of their witnesses that the invention sued on did not require the exercise of inventive genius, but only the skill known to our grandmothers, etc., in order to construct the machine and reduce it to practice.

A. I have read the testimony and would say that, in view of the time, labor and money that we have expended in perfecting a practical bretzel machine, the defendants' testimony on that point is somewhat of the character of a huge joke. With all that we have gone through in the development of these machines, and the entire failure of experienced and practical machinists, who have attempted to build bretzel machines, I would say that it requires the very highest order of inventive genius to produce a practical working bretzel machine, such as the one shown in our patent sued upon.

Cross Examination by Thomas A. Banning, Esq., Counsel for Defendants.

X Q. 26. You say you have read the defendants' evidence?

A. I have.

X Q. 27. You read the deposition of Mr. Roth?

A. Yes, sir.

X Q. 28. You examined the two cutters referred to in his deposition, one of which cut a shape like the letter B, and the other of which cut a shape like the character &?

A. I did.

X Q. 29. How long have you known of the use of such dies or cutters as those?

Objected to by Mr. Edson, as not responsive.

A. I have not known of their use at all, excepting that within the past few years, say three years, I have seen cakes made in that shape; how they were made I do not know.

X Q. 30. How long have you known of the use of cutters similar to those exhibits, except that they cut some other shape instead of the letter B and the character &?

Objected to as irrelevant by Mr. Edson.

A. I have known of the use of the ordinary cracker cutters for twenty years past. I have not known of any cutters made similar to those exhibits.

X Q. 31. In what respect did they differ from those cutters?

A. The cracker cutters that I have known were made to cut crackers in round and square forms.

X Q. 32. Did you ever know cakes or crackers or jumbles cut into a variety of different forms?

A. I have seen crackers and cakes that were cut in various shapes.

X Q. 33. For how many years?

A. Well, I should say for ten or twelve years.

X Q. 34. Name some of the forms into which you have seen crackers and cakes cut, say some eight or ten years ago.

A. I have seen crackers cut in round, square and oblong shapes. I have seen cakes cut round, square, oblong, and

in the shapes of stars, crosses, animals, letters of the alphabet and possibly other shapes that I cannot recall.

X Q. 35. This you say was as much as eight or ten years ago?

A. Yes; with the exception of the alphabet and animal shapes. These I have not seen until within the past three years.

X Q. 36. Did you make crackers and cakes of these various shapes yourselves?

A. We made but a part of them eight or ten years ago.

X Q. 37. How did you cut out these various shapes —by dies?

A. We cut them out with dies.

X Q. 38. The dies corresponded to the various shapes you desired to cut out of the dough, did they?

A. They did.

X Q. 39. And when you desired to cut a cake or cracker of any particular shape, you made a die to correspond to that shape, did you?

A. Yes, sir.

X Q. 40. These dies cut the dough on a flat surface, did they?

A. Yes, sir.

X Q. 41. That is what is meant by a flat die, isn't it?

A. What is meant by a flat die is a die that will cut out on a flat surface.

X Q. 42. How many of these dies or cutters could be attached together so as to cut simultaneously?

Objected to by Mr. Edson, as not responsive and for irrelevancy.

A. There was usually from five to six cups on a machine, where the crackers were to be large, and from nine to twelve where their product was to be small in size.

X Q. 43. How many cuts could they be made to make per minute?

A. We run them at the rate of about twenty per minute. I have known other bakers to run them at a higher rate of speed; just at what rate, I don't know.

X Q. 44. You run them at this speed and with this number of cups, eight or ten years ago?

A. We run them at this speed and with the number of cups used in large sizes at that time.

X Q. 45. By increasing the number of cups or dies, and the rate of speed, you, of course, increased the capacity of the machine for cutting the cakes or crackers?

A. The capacity could thus be increased.

X Q. 46. How was the die or cutter run, by hand or power?

A. By power.

X Q. 47. How were the dies or cutters removed, or lifted from the flat surface after the operation of cutting?

Mr. Edson enters a general objection to this line of examination, as immaterial and not responsive.

A. They were raised up by the operation of cams or eccentrics, operating with the machine, and sometimes springs were used in connection with the eccentrics.

X Q. 48. That is, they were lifted automatically?

A. Yes, sir; they were.

X Q. 49. How are they lifted in the machine which you have built, under the patent sued on?

A. They are lifted in the same way.

X Q. 50. Name all of the forms of crackers or cakes that you thus cut out with dies, before you made the contract with Lampert & Huber, about Jan. 1, 1879.

A. We made the square, the oval, the oblong and the round; these were all the kinds that were made.

X Q. 51. In making a die to cut any of these various shapes, you first took the shape as embodied in the product —cake or cracker—and had your dies cut out to correspond; was that the way?

A. These dies that were used for cutting crackers were made by persons who made a business of cracker machinery. They would manufacture these machines that were used for cutting crackers, and have samples of the goods showing the shapes run off, and send them to the bakers, soliciting their patronage for these machines, and we would buy them of these manufacturers.

X Q. 52. What I want to know is this: When you wanted a die made for any particular shape, was not that shape used as a copy for making a die?

A. That is not the way in which the business was done.

X Q. 53. If the manufacturer of machinery wanted to make a die to cut a cracker of a particular shape, did he not use a cracker of that shape as a copy or sample?

A. I think not. The machine was made first, and the cracker was the product of that machine.

X Q. 54. Take old forms of crackers or cakes that had long been made by hand, was not the die or cutter made as I have suggested?

A. My experience is, that the manufacturer of cracker machines would first design the form or shape which he desired to make, then build his machine, produce goods upon it, which would be used by him to send as samples to the bakers of what his machine would make.

X Q. 55. I am speaking of the making of dies to cut old forms of crackers or cakes. In that case, did not the manufacturer make the cutter to correspond to the old shape to be cut?

A. I have no knowledge of manufacturers of cracker machinery making machines to conform to old shapes of crackers made by hand or otherwise, but only of new designs, differing in some particular form what had been used before.

X Q. 56. If you would furnish a manufacturer to-day with a round or square or oval cracker, and want a cutter

or die made to make that particular shape, would not the manufacturer make a cutter to correspond to the shape of crackers you furnished him?

A. I think he would engage to make such machine or cuttter if he thought he could make a practical working machine of the kind desired.

X Q. 57. No matter what might be the shape of the old hand made cake or cracker that you took to a manufacturer of bakers' machinery, if you gave him an order to make dies or cutters to correspond to that old shape, he would, to use the words of your last answer, "engage to make such machines or cutters" if he saw any money in the order and had the facilities to do the work. Is not this about the fact?

Objected to by Mr. Edson, as hypothetic, vague, and indefinite.

A. Well, if such manufacturer had previously made similar machines or cutters, and understood their practical working, I think that he would contract to make a machine. But if it was for a machine with which he was not familiar and had never before made, I do not think that he would risk a possible failure to make a practical machine, except at the applicant's risk.

X Q. 58. By the words "similar machines or cutters," used in your last answer, your meaning is somewhat obscured. I will ask you whether, if a manufacturer had made a machine to cut round cakes or crackers, you would consider it a "similar" machine if he were ordered to make one cutting oblong cakes or crackers?

A. I would consider it a "similar" machine if the oblong cakes or crackers were the same character of goods as the round cakes or crackers.

X Q. 59. If you were using a machine for cutting cakes or crackers, say, round, would you change the dies if you

changed somewhat the character of the goods, or go right on using the same dies?

A. That would depend on the character of the change. Some machines will work hard dough and not soft dough.

X Q. 60. Do you mean to say that when you are cutting round crackers or cakes, you always take out the dies and put in others when you change somewhat the character of your goods?

A. If we are making one kind of crackers to-day, and would desire to make another kind to-morrow, we would change the dies to those that were adapted to the kind of goods to be made.

X Q. 61. Even though the shape was the same?

A. It might be a different character, but the same shape; yes, sir.

X Q. 62. In such cases you put in a die to suit the dough. Is that it?

A. Yes, sir.

X Q. 63. And you make the die to suit the dough. Is that correct?

A. The dies are generally made to suit the dough it is intended for them to work upon.

X Q. 64. Was this so eight or ten years ago?

A. I believe it was so, as far back as I can remember.

X Q. 65. What kind of machines are you now using for making bretzels?

A. We are using the Lampert & Huber patent principally.

X Q. 66. How many bretzel machines are you using?

A. We have used one of the Lampert & Huber patent, and we have also used one of our own invention since it was completed—not to any great extent.

X Q. 67. What has been the matter with it?

A. The reason why we have not used it more and continuously is because we had already one of the Lampert &

Huber patent set up and at work in our shop, which produces all the bretzels that we can bake, and we have no room in our shop that we could use to run our own machine; and there is nothing whatever the matter with it as I know of.

X Q. 68. Do you pay Lampert & Huber any royalty or compensation for the use of that machine under their patents?

Objected to, as inquiring into complainants' private affairs.

A. We do not; but have their permission to run the machine for exhibition and for the manufacture of bretzels, to any extent desired, for the purpose of introducing them and selling them to the trade throughout the country.

X Q. 69. You say you made a sketch in March, 1880, which you have called "Complainants' Exhibit First Sketch." How do you know that was in March, 1880?

A. The date was fixed in my mind by the fact that at that time Mr. Crawford was working on the New York machine in New York, and during that month he sent me by mail this sketch partly completed, and on receipt of it I completed it as it is now.

X Q. 70. What part of it was left unfinished by Mr. Crawford?

A. The part left unfinished by Mr. Crawford were the lines showing the twist and creasers.

X Q. 71. In the sketch, as sent you, the ends of the bretzel were represented as crossing each other where they now do, and being extended down over the bow, were they not?

A. They were not.

X Q. 72. In what respect was it otherwise, when you received it?

A. It showed the outer and the inner lines making the

bow, the extension of the loops to the bow, but not overlapping it, and not showing the creasers or the twist.

X Q. 73. By the loops you mean the ends?

A. Yes, sir; from the twist out. They are called loops or arms.

X Q. 74. You say these loops or arms extended down to the bow, but not over it, when you received the sketch?

A. I do.

X Q. 75. Were both of these figures on the sketch just alike when you received it?

A. They were, I believe.

X Q. 76. Are you sure that these loops did not overlap the bow in either one of the figures?

A. They did not.

X Q. 77. Where did they end?

A. They ended at the point at which they intersected the bow.

X Q. 78. Was the ends of these loops or arms defined so that you could see where they ended?

A. They were not.

X Q. 79. How, then, do you know where they ended?

A. They were only shown by outer lines. The outer lines showed the loops extending up to the inner line forming the bow.

X Q. 80. What do you mean by the outer lines?

A. I mean the outer lines forming the arms extending from the twist up towards the inner line of the bow.

X Q. 81. Did not these outer lines round towards and meet each other, thus enclosing the ends of the loops or arms at their juncture with the bow?

A. They did not, until I made them so.

X Q. 82. In neither of the four points in the two sketches where the loops approach the bow?

A. In neither of them.

X Q. 83. In looking at this sketch now, you may state

whether the right-hand loop of the right-hand figure does not show that it has been marked around or across the end of that loop, right at its juncture with the bow, and that such mark has been rubbed out with an eraser.

A. In finishing this sketch and making numerous other drawings in connection with the development of this machine, I did the most of it at home, after night. I finished this one there, as well as others. They were scattered about more or less in the house and handled over by my boys, and they made some of them; but this particular one was made by me, and I completed at the time the lines at the ends of the arms. I may have then rubbed them out and remade them, but I do not now remember of so doing. It does not, sir.

X Q. 84. Was there anything said in the letter accompanying this sketch, from Mr. Crawford, about it?

A. I do not remember what was said in the letter about it.

X Q. 85. Have you got that letter?

A. I had the letter at the time that depositions were taken here in this cause before. I hunted it up at that time to ascertain the date of it. The letter is probably about our office at this time, for all I know.

X Q. 86. Will you bring it down in the morning, so that we can see just what was said in it about this sketch?

A. I will produce it if I can find it.

X Q. 87. Is not this sketch about which we have been talking a sketch or picture of a hand made bretzel?

A. So far as I had anything to do with it, it is not.

X Q. 88. I do not mean that you had a bretzel before you when you made it, but does it not represent in outline the form and appearance of a bretzel?

A. In some respects it does, and in some respects it does not. It has more the appearance of a bretzel die.

X Q. 89. And a bretzel die is in the shape of a bretzel, or cuts out the shape of a bretzel?

A. A bretzel die would cut out of dough a bretzel showing all the lines and marks, creasers, twist, and the whole body of a bretzel; but a bretzel die would not show them if cut out of paper.

X Q. 90. Of course not; but is not that sketch practically and in effect just what we would get if we took a bretzel and made a sketch or picture of it in outline?

A. No, sir; it is not.

X Q. 91. Are you speaking of both of the figures on the sketch?

A. I am, of both or either of them.

X Q. 92. And yet you represent in Fig. 6 of your patent just such a looking figure, with the exception of some slight shading, and say that it "is a view of the product or bretzel of our die." Why is it not as much a view of the bretzel when on the sketch as it is when in the patent?

A. In my answer to X Q. 90 I mean that if you were to take a bretzel in your hand, and, looking upon the face of it, make a sketch of it, you would get the formation of the bow and the loops and the openings, but you would not get the lines showing the twist and the marks of the creasers.

X Q. 93. You would see the "lines forming the twist and the marks of the creasers," would you not, in the bretzel?

A. Of course they could be seen on the surface.

X Q. 94. Then you could, with your pencil, represent them on the sketch, the same as the other features which you saw, could you not?

A. That could be done.

X Q. 95. Then you would have a picture of the outlines of the bretzel, would you not?

A. Yes, sir.

X Q. 96. Like we see in this sketch?

A. If it was drawn like that, of course it would be the same.

X Q. 97. If it were drawn from a bretzel?

A. I suppose so.

X Q. 98. You say that you made the lines on this sketch representing the twist and the overlapping arms. When did you make these additions to that sketch?

A. I made them after they were received; I don't know how soon after; probably in a few days; possibly the same night, but I don't know, certainly.

X Q. 99. Why did Mr. Crawford leave those additions for you to make?

A. I don't know why. All I know is that I received those incomplete sketches from him while he was in New York.

X Q. 100. His inventive ability stopped that far short of completion, did it?

A. I do not know whether he sent them to me to be completed for the purpose of developing this machine or not, but I do know that upon receiving them I went to work and completed them with that view, and to show how the grooves, cutting edges of the die and creasers could be made on the face of a flat die to cut bretzels.

X Q. 101. And the result of your joint efforts was the production of this "Complainants' Exhibit First Sketch," was it?

A. That was one of the sketches made at the time.

X Q. 102. Do you consider that invention was required to make this sketch in March, 1880?

A. That was one of the steps that led to the invention.

X Q. 103. But the making of this sketch involved no invention, did it?

A. It showed to some extent how a die could be made to cut out bretzels on a flat surface, as represented in the patent sued upon. And we claim for that invention.

X Q. 104. This sketch, as you have said, simply shows the outlines and creasers as we see them in a bretzel, which have been made for a great many years. Do not such bretzels, therefore, as fully and completely represent the shape and configuration of your cutters as this sketch does?

A. This sketch was not intended to merely represent the outline of a bretzel, but it was intended to represent the face of a die showing grooves, the double cutting edges and the creasers. We had in view in making this the construction of such a die.

X Q. 105. Yes, but a bretzel represented fully the lines, creasers, etc., that you desired to produce with your dies or cutters, did it not?

A. We designed making a die after this sketch that would properly represent all the lines and creasers shown in bretzels.

X Q. 106. Then the bretzel contained and showed the lines, creasers, etc., that you desired to reproduce with your cutters?

A. Yes; the hand made bretzel represented the lines, etc., that we desired to reproduce in a die for cutting them out on a flat surface.

X Q. 107. The die, then, was intended to be the exact opposite of the bretzel—that is, where a line or crease appeared in the bretzel, forming a depression, the die should be full in that place, so as to fill such line, crease or depression, and where the bretzel was full or raised on its surface, the die would have a depression or hollowing out at such places. Is this correct?

A. That is about the way it would have to be constructed.

X Q. 108. To illustrate what was needed still further, if you had taken a hand made bretzel of the form that suited you, and that you desired to copy, and pressed it into some yielding or plastic material that would have filled its various

lines, creasers or depressions, and then let such plastic material set or become hard before removing the bretzel, you would have had a perfect mould or die, exactly representing the form and configuration of the bretzel, would you not?

A. Yes; you would have the perfect form and configuration of the baked bretzel, but not exactly that of it in the plastic state, before baking.

X Q. 109. Baking causes the bretzel to shrink, so that a baked bretzel is smaller than the unbaked, is it not?

A. It is not; it may shrink somewhat in length, but will be enlarged in all other directions.

X Q. 110. Then it is smaller before than after baking?

A. If the bretzels are made of very poor stock, and the dough is not properly sponged, they will not increase in size in process of cooking, but if they are handled properly throughout and made of good stock they will become longer in the process of baking.

X Q. 111. When was this "Complainants' Exhibit, March, 1881, Copy" made, which you say was a copy of a drawing made in March, 1881?

A. It was made some time before the application for the patent was made.

X Q. 112. How are you able to state that the original drawing from which this copy was made, was made in March, 1881.

A. That date is fixed in my mind by the fact that one of my boys, who did something at drawing, made this original drawing from which this copy was made, and I remember that during that time, and immediately thereafter, he was attacked with nervous prostration and spasms, and it was in March, 1881, when they commenced; sometime during the month.

X Q. 113. What became of that original sketch?

A. That original sketch was taken by me to the party who made this copy, and there left. At the time I went for

this drawing, or when he brought it to me, the original drawing was not returned. The party to whom I gave it was an entire stranger to me and I never went after him to look up or obtain possession of this original drawing until after this suit was commenced. I then went out to find him in order to get from him a bill showing the date of the making of this copy. I could not find him or anyone who knew where he was, and so I have not been able to get it.

X Q. 114. Is this drawing a correct copy of that original made in March, 1881?

A. It is substantially the same. There may have been some slight changes made in it.

X Q. 115. Did your son have a model to make that original drawing from?

A. I think I had a plate somewhat similar to that shown in Figure 1, and he had drawings and sketches made by me before that time, showing the formation of the bretzel, as a guide.

X Q. 116. Up to that time, had your son ever seen a bretzel?

A. He had seen bretzels made on the machine bought of Lampert & Huber, hand made bretzels, and, possibly, other bretzels made at our place.

X Q. 117. When he made that drawing did he not have a hand made bretzel before him to copy from?

A. No, sir; I think not.

X Q. 118. You wanted the drawing to represent the marks, creasers, etc., shown in a hand made bretzel, so that they would be reproduced by the die, did you not?

A. To some extent, I did.

X Q. 119. Why, then, did he not have such a bretzel before him in making his drawing?

A. It didn't seem to be necessary. I had these small drawings, which I had made, there, and, being familiar with

the formation of bretzels, I was able to explain such parts as he was not familiar with.

X Q. 120. What did he copy the other parts of the drawing from, such as the plates, springs, rods, etc., shown in this drawing?

A. My recollection is, that the springs were made from his mind, and I think that I took him down to the warehouse and exhibited to him the frame of a machine provided with rods and base; had him examine it and explained to him particularly and in detail how changes would have to be made in order to make what we required in our machine.

X Q. 121. These other parts of the machine represented in this drawing, besides the dies, were taken from the ordinary cracker or cake machines, such as you had been using for some years, were they not?

A. The outer lines showing the outer part of the cutter frame were drawn to correspond with that of the cutter frame used upon one of our old cracker machines, upon which we contemplated using our dies.

And thereupon the further taking of depositions herein was continued until to-morrow morning (April 10), at eight o'clock. April 10, parties met pursuant to adjournment. Same counsel present. And thereupon the taking of depositions was continued, as follows:

X Q. 122. As I understand, one of the merits of your invention consisted in the fact that your dies could be used in the ordinary cake or cracker cutting machines so as to cut on a flat surface. Is this correct?

A. They can be adapted to run on cracker machines, such as used by many of the smaller bakers.

X Q. 123. In that case all that is required is to take out the plate containing the cracker dies, and substitute the plate containing the bretzel dies, is it not?

A. The whole part of the cracker machine, including the cutter frame and all parts connected with that, would

have to be removed, leaving nothing but the frame of the machine into which the bretzel machine could be fitted for work.

X Q. 124. The cracker or cake cutters are placed in a plate, are they not?

A. There is a plate used in connection with them.

X Q. 125. And your dies are also put in a plate, are they not?

A. The dies are fastened to another part of the machine and work automatically through the plate.

X Q. 126. Then, as I understand, you would substitute the parts carrying your bretzel cutters in the cake or cracker machine, instead of the parts carrying the cake or cracker cutters, and thus make a simple and inexpensive machine?

A. We would substitute the whole bretzel cutting machine for the whole cutting part of the cracker machine, thereby making a comparatively inexpensive machine. By the whole bretzel cutting machine, I mean all of its parts as described in the patent sued upon.

X Q. 127. In view of the Lampert & Huber 1876 machine, you were not the first to make a die to cut bretzels, were you?

A. We were not the first to make a die to cut bretzels by the use of cylinders.

X Q. 128. That patent also shows three internal off-bearing scrap passages, does it not?

A. No, sir; not what we term off-bearing scrap passages. It merely shows openings in one of the cylinders through which the scraps fall into the cylinder.

X Q. 129. The internal scraps pass through three holes or openings in the die, do they not?

A. There are three internal scraps to each bretzel; there are three corresponding holes to each die in one of the cylinders, into which these scraps fall as the bretzels are cut,

and are carried off by a cone made for that purpose and fitted on the inner part of the cylinder.

X Q. 130. In making that answer you were looking at the Lampert & Huber 1876 patent, were you not?

A. Yes, sir.

X Q. 131. Do you see in that patent any cone such as you described in your answer to X Q. 129?

A. The cone such as described was one of the improvements made on the 1876 patent and was the subject of a patent taken out after that date, and is not shown in the 1876 patent.

X Q. 132. Now, please answer my X Q. 131 directly.

A. I do not see any such cone.

X Q. 133. The internal scrap passed through three holes in the die into the cylinder and was removed by hand, was it?

A. The internal scrap cut by the Lampert & Huber machine, built in accordance with their 1876 patent, was intended to fall through corresponding openings in the dies of one of the cylinders as described; but as a matter of fact these openings did not admit of these internal scraps passing through them into the cylinder, but clogged up the holes, so that the machine would frequently be stopped and the scraps removed by hand.

X Q. 134. Please answer my X Q. 133.

Objected to by Mr. Edson, as the question has been already fully answered.

A. If the question means to ask if the internal scrap passed through these three holes by operation of the machine, as was intended by the patentees, I would say no, it did not.

X Q. 135. In the machines made by you, under this Lampert & Huber patent, the internal scrap passes through the three holes into the cylinder, does it not?

A. Yes, sir; the internal scraps do, and are carried off through the operation of a cone.

X Q. 136. Did you ever see a machine made like this Lampert & Huber 1876 patent, without the cone which you have described?

A. Yes, sir; I have seen one or two of them and operated them.

X Q. 137. Did you build them, or either of them?

A. I think we had one of them built in New York. I am, however, not positive about that.

X Q. 138. Your patent provides or states that your "die can also be readily applied as well to a cylindrical surface as to other surfaces," does it not?

A. Yes, sir; I believe it does.

X Q. 139. When so applied to a cylinder, the internal scrap would fall into the cylinder, would it not?

A. It could be arranged to pass that way, or might be arranged to discharge it otherwise.

X Q. 140. By a cone, do you mean such as you have described?

A. I did not have particular reference to a cone, but other means could be provided to take care of the scrap.

X Q. 141. The holes, if they extended through the die as they do in your patent, would necessarily open into the cylinder, would they not?

A. No, sir; they would not.

X Q. 142. Then the holes in the Lampert & Huber dies arranged on their cylinder need not necessarily open into the cylinder, either, need they?

A. To make a perfect working machine as we have made them under their patent, to produce the large quantity of bretzels that is necessary, that the largest bakers running a machine would desire, it would be necessary to have them discharged through into the cylinder.

X Q. 143. And yet you claim that you could arrange

your dies on a cylinder and not have them discharge the scrap into the cylinder.

A. It could be so arranged.

X Q. 144. And could not arrange the dies on the Lampert & Huber machine without having the scrap discharged through into the cylinder.

A. I did not say that that could not be done.

X Q. 145. Then in both cases, with their dies and with yours, it could be done?

A. I think it is possible.

X Q. 146. And in both cases, with their dies and with yours, it could be dispensed with?

A. It could not be dispensed with in the Lampert & Huber machine without somewhat injuring its value.

X Q. 147. Look at this Lampert & Huber 1876 patent, and state whether the dies there shown did not produce lines, or creasers, showing the twist of the bretzel.

A. The lines in the dies of the upper cylinder show a part of them, and the lines in the dies of the lower cylinder show a part of them, but neither shows them complete.

X Q. 148. That is, they only made a part of the lines and creasers on each side of the bretzel?

A. They made lines on the upper and lower side of the bretzel

X Q. 149. Your dies cutting on a flat surface make no lines or creasers on the lower part of the bretzel, do they?

A. They do not.

X Q. 150. In this machine which Lampert & Huber brought you about Jan. 1, 1879, how was it? Did it show the lines and creasers forming the twist of the bretzel?

A. It showed them imperfectly.

X Q. 151. In that machine which you ordered built in New York early in 1879, and of which you have introduced two staves, one of the upper and one of the lower cylinder,

were the lines and creasers forming the twist of the bretzel shown?

A. They were shown more perfectly than in the machine which we bought of Lampert & Huber.

X Q. 152. All of the lines and creasers are shown in that machine, so as to represent the twist of the bretzel in the finished product, are they not?

A. I think they were, but I am not sure of that. They were changed afterwards in making other machines, in some respects.

X Q. 153. When was that 1879 New York machine ordered?

A. It was ordered sometime during the year 1879. I think it was sometime during the spring of 1879; I think early in the year. I could not tell without reference to the books.

X Q. 154. As I have understood, Lampert & Huber sold you a machine—the one that you have above referred to—at the time that you made your contracts with them, about Jan. 1, 1879?

A. I believe that that machine was to be furnished to us by them. That was the understanding at the time the original contract was made. But there was no value put upon it, as it was but a crude affair, made by them, and was entirely unfit for practical work. It was delivered to us immediately after the contract was made.

X Q. 155. You cut some bretzels with it to see how it would work, didn't you?

A. I think we did; we naturally would. It had only one row of dies around each cylinder.

X Q. 156. In answering direct question 7, you say that "during the years 1879, 1880 and 1881 we were experimenting with dies." That was in connection with the Lampert & Huber machines, was it not?

A. It was partly with the dies of their first machine, and

partly with dies made in New York, and partly with dies at home.

X Q. 157. All these dies were in connection with the Lampert & Huber machines, were they not?

A. We made one die that was not in connection with those machines, during that time—in 1881, I think.

X Q. 158. In answering direct question 7, you also say that "in March, 1882, we ordered a model made representing the cutter sued upon." Was not that the first attempt made to embody it in a model?

A That was not the first attempt.

X Q. 159. How many days work did it require to make this sketch called "Complainants' Exhibit First Sketch," made in March, 1880?

A. I do not know, as I only made a part of it; and I do not even know the exact length of time employed in reducing it to its present shape.

X Q. 160. Do you think it required the work of one hour?

A. It required a great deal of time, studying and drawing, in attempting to get what is there shown; but the actual time employed in doing the work, which I did on this sketch, I think was very short.

X Q. 161. You say you had made some little sketches before you made this "First Sketch" in March, 1880. State how many hours you were actually engaged on those pencil sketches which you threw away?

A. I made sketches, different ones, I think, during that month and back as far as 1879; how many of these were made I do not remember. I worked on them nights, at home, to a great extent.

X Q. 162. Up to the time you finished this "First Sketch" had you actually taken, out of your business time, to work on these sketches, as much as one day?

A. I could not say what actual time I was employed on

those sketches up to that time which was taken out of my business; there was more or less time spent in this direction during business hours, but how much I cannot state; I should think more than one day; but during the time until this sketch was made, there was considerable time taken from business in experimenting and studying machinery, with a view to perfecting it, but no account was kept of it, and it is impossible to approximate the length of time thus devoted.

X Q. 163. Up to the time you had finished this sketch in March, 1880, and long afterwards, you were working for the development and perfecting of the Lampert & Huber machines, were you not?

A. Up to that time, and afterwards, we were working to develop, improve and perfect the Lampert & Huber machine, as well as our own contemplated machine.

X Q. 164. Leave out everything that you did with reference to the Lampert & Huber machine, and tell me if you took out of your business, up to the time you had finished this "First Sketch," in March, 1880, as much as one day to make sketches, etc., in reference, as you have said, to the machine covered by the patent in suit?

A. Yes, much more than that. I spent days—day after day—I don't know how long, studying the original Lampert & Huber machine to make one to cut on a flat surface like our patent sued on.

X Q. 165. This sketch of March, 1880, did Mr. Butler see it or have anything to do with it until after it was put in the condition now shown?

A. I do not know that he had, or that he saw it, but do not remember positively.

X Q. 166. In answering direct Q. 10, you say that "Mr. Butler was consulted and made suggestions as to how it could be made a practical machine." You here mean the op-

erative full sized machine that was built in the spring of 1882, do you not?

A. I think he made suggestions as to that and before that. The matter of making the machine and its character was talked over between us while it was pending.

X Q. 167. If Mr. Butler had not been your partner in business, would he have been made one of your partners in this patent?

Objected to by Mr. Edson as incompetent, being a question of law for the court.

A. If Mr. Butler had not been one of my partners in business it is likely that he would have known nothing about it, and it is possible Mr. Crawford and myself would have attempted to build a machine of this character.

X Q. 168. Was he not made your co-partner in this patent from the fact that he was your partner in business, rather than from the fact that he had made any suggestions about the supposed invention?

A. He was certainly not; if I had perfected the patent myself, I should have applied for a patent in my own name, as I have for other things we use in our business.

Re-Direct Examination by Mr. Edson, Counsel for Complainants.

R-d. Q. 169. You will please state in a general way, what differences in construction exist between dies constructed for cutting crackers, cakes and jumbles, having reference to different kinds and qualities of dough on which they are to be used.

A. There are differences in dies used for cutting various kinds of goods. The dies used for cutting jumbles, snaps and that character of goods, so far as I know, operate more as punchers and could not be used in cutting cracker dough. Dies, used for cutting the various kinds of dough from which crackers are made, are made to be suited to the

character of the dough intended to be used; for instance, a die used to cut out the dough for hard butter crackers, if used on dough intended for sponge crackers, their character would be changed from that which it would be if cut with a cutter made for that purpose. Cutters are generally made to suit the kind of dough to be used.

R-d. Q. 170. In getting up a new die for a cracker, is the proposed shape of cracker made of flour, etc., to serve as a guide to the machinist, or is a model or drawing of the die first made for that purpose?

A. My understanding is that the machine manufacturer would first make his design and then build his machine to correspond to his new design.

R-d. Q. 171. Can you produce the letter written to you by Mr. Crawford from New York, transmitting the drawing marked "Complainants' Exhibit First Sketch?" If so, please produce and identify it, and state if it contained any other enclosure than said "First Sketch."

A. I have it, and now produce and identify it. The same is produced, and filed, and marked, "Complainants' Exhibit Crawford's March, 1880, Letter. Gilbert H. Stewart, Notary Public." This letter contained the enclosures besides the "First Sketch." These enclosures were sketches of bretzel dies, representing them in different stages of improvement. I here produce them and identify them as those received in that letter, and the same are filed and marked, "Complainants' Exhibits New York Sketches, March, 1880, Nos. 1 and 2. Gilbert H. Stewart, Notary Public." These sketches "Complainants' Exhibits New York Sketches, March 1880, Nos. 1 and 2" show the lines on the face of the die just as they were upon "Complainants' Exhibit First Sketch" when I received it from Mr. Crawford from New York.

R-d. Q. 172. Do the arms of a hand made bretzel in-

variably extend to some particular point over the bow of the bretzel?

A. The arms of a hand made bretzel do not extend to any particular point over the bow of the bretzel, but are varied by the haste in which they are formed. This is regarded as one of the imperfections incident to that mode of making them. They also usually extend beyond the line of the bow. This is also regarded as one of the imperfections of that mode of making them, the result of which is, they damage greatly by breakage and handling and shipping.

R-d. Q. 173. How does the construction of the dies in your working machine, constructed in accordance with the patent sued on, compare with the die shown and described in "Complainants' Exhibit First Sketch?"

A. The dies constructed in accordance with the patent sued on are made to cut the bretzel complete. They are constructed substantially the same as the die shown in the "First Sketch."

R-d. Q. 174. What are the prominent points of difference which distinguish the manufacture of bretzels from the manufacture of cakes, crackers, bread, etc.?

A. Bretzels are made from different kind of dough than that used in crackers and cakes. They are treated by an entirely different process, requiring persons skilled in the art to properly make them. Bretzel baking is a trade of itself, not generally known to persons engaged in the manufacture of crackers and cakes. Such persons would know nothing more about the manufacture and treatment of bretzels than they would of the manufacture of candies. When we set up our first machine we brought to our aid and consulted a number of the leading bretzel bakers, from whom we supposed we had learned enough of the art to properly manufacture the goods. But we found it so difficult to produce good bretzels that, after months of labor and ex-

periment, we were compelled to go East for an experienced bretzel baker, who was thorough in the business and at once made the quality of goods desired. Where we have sold machines to large bakers we have invariably had to go to their shops and instruct them and their men in the proper mode and treatment to enable them to produce good bretzels.

R-d. Q. 175. In answer to question 139 you state that the internal scrap might fall into the cylinder in case your dies were arranged to operate upon the cylinder. Please state as a matter of fact whether the dies or cups, shown in the patent sued upon, have ever been practically operated by being attached to a cylindrical surface?

A. They have not, as a whole, but the creasers have.

R-d. Q. 176. So the walls of the openings in the dies or cutters shown in the Lampert & Huber patent of 1876 converge, diverge, or are they otherwise formed, from their outer to their inner ends?

A. They converge from the outer to the inner edge—that is to say, they are made smaller at the inner than they are at the outer edge.

R-d. Q. 177. Compare the formation of said walls with like walls in the openings in the dies shown in the patent sued on?

A. The walls in the dies in the patent sued on are made different from this; that they diverge from the outer to the inner edge, so that the openings are larger at the side opposite the cutting edge.

R-d. Q. 178. Please read question 143 and the answer thereto, and state how your cutters could be arranged to operate practically without discharging the internal scrap into the cylinder on which they were placed.

A. I think they could be arranged so as to have the internal scrap carried off by an apron. We have had some such arrangement as that in contemplation, but have never

perfected it, so that at this time I do not know positively that it would work satisfactorily.

R-d. Q. 179. Please read question 150 and the answer thereto, and state wherein the lines and creasers forming a twist of the bretzel were imperfectly formed?

A. They were imperfectly made and changes were made in those parts in building those machines, but just what those changes were I do not now remember distinctly.

R-d. Q. 180. Were there any creasers in said machine in the position shown by the creasers lettered A^5 in the patent sued on?

A. My recollection is that there were not.

R-d. Q. 181. In the machine which you had built in New York, how many creasers do you find represented in the staves taken from said machine and filed in evidence in this cause?

A. I think I discover two and a half in each one of the dies, making five, I suppose, to each bretzel. A part of these would show the marks on the upper part of the bretzel and a part would show marks on the lower part of the bretzel.

R-d. Q. 182. You state that the lines and creasers forming the twist of the bretzel were in the New York machine and in the one bought from Lampert & Huber. See question 151 and the answer thereto. Compare the creasers and lines forming the twist on the patent sued on with the lines and creasers represented in the New York machine, and state what, if any, differences in construction exist.

A. In the face of the die in the patent sued on I see a central creaser, two side creasers and two end creasers. These creasers differ from those shown in the New York machine in this: that they are cast solid with the other parts of the die, while in the New York machine they are made separately and set in; and further, that they are depressed below the cutting edges, whereas in the New York

machine they are shown to be flush with the cutting edge of the die.

R-d. Q. 183. How much time did you give to study and experiment during the years 1879, 1880, 1881 and 1882, either in or out of business hours, in endeavoring to improve and perfect the Lampert & Huber machine, as well as your own?

A. I devoted more or less time to it during all of that period, by day and by night. I would say that my time during that period was equal to or more than one-half of that devoted to all my other business.

R-d. Q. 184. In your answer to question 167 you state that "if Mr. Butler had not been one of my partners in business, it is likely that he could have known nothing about it," etc. Will you not now answer said question a little more fully, and state more fully your meaning as to his connection and interest in the subject matter referred to?

A. I myself first saw Lampert & Huber and examined their machine, at their place of business, and talked to them about buying an interest in their patents, which our firm did afterwards buy. After my returning home from my meeting Lampert & Huber, and talking with them in regard to buying an interest in their machine, and thinking the matter over in my own mind, I concluded to communicate the facts relating to their machine and patents to my partners. Inasmuch as I believed, if an interest in it was taken, that the business in connection therewith could not be left with Lampert & Huber, but would require the time and labor of at least one or two active men; therefore I wish to be understood to mean that if Mr. Butler had not at the time been one of my partners, that I would have went on with it myself, or in connection with some one else, and that in all probability he would have had no connection with it.

Re-Cross Examination by Mr. Banning.

R. X Q. 185. I believe you have said that bretzels had only become an article of commerce and extensively used in the last four years?

A. I think I said so.

R. X Q. 186. Does this sketch made in March, 1880, marked "Complainants' Exhibit First Sketch," fully represent complainants' patent sued on?

A. It represents it so far as it goes.

R. X Q. 187. I mean, of course, so far as the die or cutter is concerned.

A. Said sketch was made to represent the die, or a die, and is like figures 3 and 6 of the patent, exactly.

R. X Q. 188. Is this metal die, marked "Complainants' Exhibit Brass Cutter," made exactly like that March, 1880, sketch in its representation of the creasers showing the twist, etc., of the bretzel?

A. A bretzel made with this brass die would show the marks of the creasers, as they are represented in the sketch.

R. X Q. 189. When was this brass model made?

A. It was made previous to the time that we commenced work upon our practical machine. At this time I could not state whether it was made the same year the machine was made or not. I did not give the order for it myself, and do not know exactly when it was made.

R. X Q. 190. Is your co-patentee, Mr. Butler, in the city, and is there anything to prevent his testifying for complainants?

Objected to by Mr. Edson, as not responsive.

A. I suppose he is in the city, and I don't know of any reason why he could not testify.

GEORGE W. EARHART.

WILLIAM M. CRAWFORD, being produced, sworn and examined on behalf of complainants, testified as follows, in answer to interrogatories propounded by Mr. Edson:

Q. 1. Please state your name, age and occupation.

A. William M. Crawford; my age is 43 past; and I am a wholesale manufacturer by occupation.

Q. 2 Are you one of the complainants in this cause, and are you one of the co-inventors of the patent sued on?

A. I am.

Q. 3. Please state your experience in connection with the construction of the complainants' New York machine.

Counsel for defendants here objects to any evidence about other machines than the one covered by the patent in suit, as incompetent and irrelevant.

A. The New York machine was commenced by the parties who built it, Messrs. Fowler and Rockwell, of New York city, in the fore part of the year 1880. They worked upon it for several months, during which time I visited them at intervals, for the purpose of ascertaining how they were progressing with it. After it had been in their hands for several months, and finding that they were getting along very slowly with it, as we thought, it was concluded best by my partners and myself for me to go to New York and stay until the machine was completed, which I did. I found that they were having a great deal of trouble with the machine, of various kinds, and that in order to have a working machine that there would have to be radical changes made in the construction of it. The plans from which they were building the machine being imperfect, and the cylinders of the Lampert & Huber machine which they had as a working model being impracticable, we spent a great deal of time trying to make a machine after their design, and before finishing the machine found that we had almost entirely abandoned the original ideas. After re-

maining in New York for several months, finally concluded to ship the machine home and finish it in Columbus. I received the services of Mr. Henry Huber, one of the patentees of the Lampert & Huber machine, and he and I proceeded to finish up the machine. We worked for several months upon it, making changes and alterations from time to time as they presented themselves to us, until finally, after many experiments, disappointments and failures, succeeded in getting a machine which we thought would do the work intended. The machine was put up in our bakery, and after trial found it to be inoperative. It was so imperfect that we had to abandon it. The defects in the machine were of various characters. In the first place, the staves upon which the dies are located, though firmly and substantially constructed, would spring when the dough was passing through the cylinders, thereby preventing the cutting edges of the dies from meeting, in consequence of which the bretzels would not be entirely separated from the scrap, causing the scrap and bretzels to follow around the lower cylinder, and thereby preventing its working. Another imperfection was in the openings in the dies, owing to said openings being straight, or not diverging from the face of the cutter. We also found the upper or smaller opening to be so small it was almost impossible, when the dough was in certain stages, to force it through. We also found the cone which is located in the upper cylinder to be useless for the purpose intended, on account of our having to put a brace in the center of the cylinder, and we took it out. We also found that the connection of the dies, one with the other, was a mistake, from the fact that when dropped from the lower cylinder upon the pans, they would not drop regularly and apart, but would pile upon each other and become torn and bruised by the revolving of the cylinder. We also found that the metal from which the cylinders or staves and dies were made was entirely too

brittle to do the work intended, and that the upper staves, owing to the thickness of which they had to be made, did not allow of a free passage of the scrap into the cylinder. We also found that the expelling apparatus would not work as desired, and were compelled to remove a slotted cylinder, which was placed within the lower cylinder for the purpose of withdrawing the plungers or studs after they had expelled the bretzel from the mold. After meeting with so many discouragements, we decided to construct a new set of cylinders. To do this necessitated the going over of nearly all the work that we had previously done. New patterns had to be made conforming to the changes which we had discovered necessary by our experience and many failures.

Q. 4. Are you now speaking of the reconstruction of the New York machine, or the building of an entirely new one?

A. I am speaking of the reconstruction of the New York machine. We made cylinder and die patterns, and after much trouble, time, and expense, succeeded in obtaining a pair of brass cylinders. These cylinders conformed to the shape of the cylinders intended by the patentees, but were cast solid instead of in staves. The upper cylinders, in consequence of their being cast solid, did not require to be made as heavy or thick as was required in the iron staves, which was a great advantage in allowing the scrap to pass more readily into the upper cylinder. We also separated the dies upon the periphery of the cylinder, thereby enabling us to remove the entire scrap, excepting the inner scrap made by cutting out the bretzel. We also substituted a solid cylinder for the perforated cylinder, which was within the lower cylinder, and placed upon the plungers, or expelling studs, spiral springs for the purpose of withdrawing said studs after they had discharged the bretzel from the mold. We worked upon these cylinders

for a long time, and finally, after many disappointments, changes and anxiety, turned out a perfect working machine, as we thought.

Q. 5. What was your next step? Also give your further experience in connection with your co-inventors and your and their employees, in producing practical working bretzel machines.

A. Our next step, after working the machine constructed as described above, and thoroughly testing it for the purpose of improving upon it, if possible, was to commence the manufacture of machines for sale. We found that some improvements could be made which would be of benefit to the machine, but which incurred still more expense, as well as time. New patterns had to be made, as in the rebuilding of the New York machine.

And thereupon the further taking of depositions herein was continued until to-morrow morning (April 11), at eight o'clock.

April 11, parties met pursuant to adjournment. Same counsel present. And thereupon the taking of depositions was continued as follows:

A. To continue my answer to question 5, I would say that the contract to build new machines was given to the Sciota Valley Machine Co., who constructed the machines under the supervision of Mr. Huber, one of the patentees of the Lampert & Huber machine. A great deal of trouble was experienced by them in making the first machine they made (they made a number); they made eight or nine brass cylinders before obtaining a perfect one. I visited them from time to time, giving the benefit of my years of experience, and, after exceeding the time allowed them to finish the first machine by several months, they at last succeeded in producing a perfect working machine. To give some idea of their conception of the amount of work there was upon these machines, and the skill required to make them,

I will state that they made to us three distinct propositions to build the same. Their first examination of the machine was made by the foreman and, I think, superintendent of the Sciota Valley Machine Co. Their proposition to us to build the machines was for $250.00 apiece. This proposition to us was so absurd, in view of the expense which we knew would be attached to the building of these machines, that we refused it, and invited a further examination of the machine and another bid, which was made, and which we considered to be too low in price for them to do us a good job. A third proposition, after consulting with us, was made to us, which we accepted, which was a large advance on the first proposition. The machines, under this contract with them, were finally finished, and Mr. Dunn, the superintendent of the company, the president and secretary of the same, as well as their foremen, told us upon several occasions that, upon the contract made with us for making these machines, they had lost several hundreds of dollars. The Sciota Valley Machine Co. is an old established concern; they manufacture all kinds of machinery and are looked upon by the community as sharp, shrewd men, who understand thoroughly the business of manufacturing machinery. In building these machines we built them substantially the same as shown in the Lampert & Huber patents—that is to say, with a heart-shaped die having the bow, the loops and the twist, with openings for the passage of scraps, and expelling studs. The dies spoken of were placed upon the peripheries of the cylinder, but separated —that is, not touching each other. The openings between the rows of dies, as shown in the New York machine, were omitted, as well as the cutting knives, thus allowing us to take up and carry off upon an apron, provided for that purpose, the entire scrap made by the machine, with the exception of the three internal pieces. We also provided the cylinders with outer bearing edges, thus enabling us to

prevent the cutting edges of the die from dulling and grinding themselves one upon the other. We also placed within the upper cylinder the cone spoken of above, somewhat improved, so that it did the work as originally intended. We left off the cylinder heads of the upper cylinder, which facilitated the more perfect working of the cone and the discharging of the internal scrap. We also attached to the upper cylinder conductors for the purpose of taking the scrap as it was worked out of the cylinder by the cone, away from the machine. We improved the lower cylinder by omitting the five or six hundred spiral springs which were in it, as well as the slotted cylinder and the solid cylinder. We operated the expelling studs or plungers, instead of with the springs spoken of, by a cam operating upon bars running parallel with the dies upon the cylinder. We also added additional geared cog wheels to the machine, placing them upon both sides of the machine, instead of upon one side, as they were upon the New York machine. This additional gearing was so arranged that the pressure upon the bearings was equalized. We also widened the machine for the purpose of enabling us more readily to handle the pans. We attached a frame to the end of the machine nearest the cylinders with rollers fastened in the frame, and at the extended end of the frame, and placed thereon a scrap apron which carried off the continuous scrap from the cylinders to the rear of the machine. The cylinders on this machine were made of brass, whereas in the old machines they were made of cast-iron. The substitution of brass for iron in making these cylinders was a very important one. When made of iron, the cutting edges of the dies, when they came in contact with each, would chip out, leaving small nicks in the die which, prevented their fully cutting the bretzel from the sheet of dough; a nail or other hard substance accidentally passing through or between the cylinders would damage the dies to such an

extent as to make them worthless for the purpose intended. Brass dies would not be thus affected, for the reason that they could be easily repaired by drawing up the indention or by brazing or soldering. This first machine, as made by the Sciota Valley Machine Co., was finished in February, or March, 1882. This machine was the first machine built under the Lampert & Huber patents, embracing the principles involved in their patents, which was a complete success. It was the astonishment of the baking fraternity and the admiration of mechanical experts.

Q. 6. Please compare the machine represented in the Lampert & Huber patent of 1876 with the New York machine, and point out the differences in construction, having especial reference to the cutters or dies.

A. The only differences that I can perceive in the construction of the New York machine and that shown in the Lampert & Huber patent of 1876, are: First, the cylinders in the New York machine have five rows of dies instead of one. The dies or cutters of the lower cylinder in the patent spoken of have the central portion of the die left open or perforated. The corresponding portions of the dies of the upper cylinder project beyond the surface of the cutting edge of the die for the purpose of pushing the internal scrap through into the cylinder. The loops or arms of the dies in the patent spoken of extend to the inner line of the bow of the die, while in the New York machine the lower die shows the loops or arms extended into the body of the bow with creasers. In the New York machine the dies do not show the raised central portion as described above. In the New York machine are shown cutting knives, which are placed in the openings between the dies on the upper cylinder. Another difference is in the cylinder which has the central openings, being the lower cylinder instead of the upper cylinder, as shown in the New York machine.

Q. 7. Make a similar comparison and statement of the

differences in construction between the New York machine and the one shown and described in the patent sued on.

A. The one shown and described in the patent sued on is operated in a different way from that of the New York machine. The dies in the machine described in the patent sued on are different from those in the New York machine, in the central openings being diverging from the face of the die and serving as off-bearing passages for the internal scrap; in their having five (5) creasers, consisting of two side creasers, one central creaser and two end creasers, which are below the cutting edge of the die; in the grooved portion of the die being so constructed or formed that it makes a bretzel which, when baked, has a rounded form. The creasers spoken of are so constructed that the product of the die has the appearance of having been made of a tapering piece of dough having one end lapped over or twisted around the other, thus producing the appearance of a hand made bretzel with the ends pressed down into the body of the bretzel. In its consisting of one die to produce what requires two dies to produce in the New York machine; in its being adaptable to any ordinary cracker machine frame; in the simplicity of its construction and its comparative cost; in its adaptability to work upon a flat surface, as well as upon that of a cylinder. The dies in the New York machine contain three (3) perfectly formed creasers and two imperfectly formed creasers; it does not contain the off-bearing scrap passages; these creaseres are not depressed below the cutting surface of the dies, as shown in the patent sued upon; it requires two (2) dies to make a bretzel, a male and a female, one operating upon the other, instead of one die, as shown in the patent sued on. The New York machine cannot be used to cut out bretzels on a flat surface on account of the product being misshapen. The central openings shown in the New York machine are not off-bearing in their structure, in consequence of which the internal

scraps could not be forced or projected into the cylinder, but would drop out upon the apron, thereby involving the necessity of removing them by hand. The cost of building the New York machine is at least four hundred (400) times greater than that of the machine described in the patent sued upon. The New York machine requires additional shop room, and all the necessary belting and attachments to operate it. It is so expensive that only the large and wealthy bakers of the country can buy it.

Q. 8. What was the substance of your contract with Fowler & Rockwell, of New York, the contracts for building the New York Machine, and was the contract on their part fulfilled?

A. They would not agree upon a fixed price, but said, owing to this patent machine being a new invention and something entirely different from what they had ever constructed, they could not put or fix a price upon it, but would take our drawings and patterns and build us a machine, charging us only for the labor upon it and the material used, but thought that the cost of the machine would not exceed $600. They thought that the time which it would take to build the machine would not exceed three months, but it was over a year before we obtained the machine from them, and then they informed me that they had done all to it that they could. It was then shipped to Columbus, O.

Q. 9. What is the standing of Messrs. Fowler & Rockwell in this country as machinists and engineers?

A. They are regarded by the bakers of the country as the best manufacturers of cracker machinery; they manufacture all classes of bakers' machinery, including dies, cutters, ovens, dough mixers, etc. We selected them to build this machine because we knew them as being among the very best mechanics in their line in the United States.

Q. 10. Has Mr. Butler, one of the complainants in this

cause, had any practical experience in the bakery business? If so, state what you know about it.

A. He has. He has had many years of experience. He is a practical baker, having learned the trade. He has been in business for the thirty years last past, at least.

Q. 11. What part did he take in the development and reduction to practice of the invention covered by complainants' patent sued on?

A. I cannot state what particular part of the machine Mr. Butler suggested, but remember distinctly consulting with him at times about its construction.

Q. 12. Was Mr. Huber, one of the patentees of the Lampert & Huber machine, employed from time to time by complainants in their efforts to reduce the Lampert & Huber machine to practice?

A. He was. We were in consultation with him at various times during the progress of the New York machine, and he assisted myself while endeavoring to perfect the New York machine after it had been shipped to Columbus, O. He was also engaged with us in the manufacture of the new cylinders that were made for the New York machine, working side by side with me, until its completion. He was also employed by the Sciota Valley Machine Co. to work upon and superintend the construction of the first machine which they made for us.

Q. 13. In view of the state of the art at the date of Messrs. Lampert & Huber's first application for letters patent, was there a leading thought or principle of invention disclosed in said original patent, which was embodied in each and all of the bretzel machines constructed by complainants, including first complete working machine? If yea, please state what that principle is.

A. There was a new principle advanced in their patent which was continued throughout the various machines that were made, including the first complete working machine.

That principle consists of heart-shaped dies having a bow, the loops or ends, and twist, with or without openings in the cutter of the dies, as may be desired, and with or without expelling studs, as desired, said dies being located upon the periphery of cylinders and mounted one above the other and working together to form a bretzel.

Q. 14. You have pointed out quite in detail, however, that various modifications, changes and improvements, extending over several years, were required before said principle of invention was embodied in a practical working machine?

A. I have.

Q. 15. How much profit have the complainants realized from the sale of bretzel machines and from royalties?

A. As near as I can arrive at it without an examination of the accounts upon our books, I should say in the neighborhood of seven thousand ($7,000) dollars.

Q 16. Then three thousand dollars deducted from over thirty thousand dollars, the entire disbursements for labor, time and material, would leave over twenty-seven thousand ($27,000) dollars as total disbursements before you realized any profit from the sale of machines or from royalties?

A. Yes, sir.

Q. 17. Are the complainants interested in or owners of any other patents than those referred to in this deposition?

A. They are. We own jointly the patent for a coffee cleaning machine; also patent for the preparation of dough, which consists of a blower, which is used in connection with the bretzel machine for the purpose of skiffing or glazing the surface of a sheet of dough, instead of dusting it with flour, as is usually done by cracker bakers, to keep the product made from adhering or sticking to dies or cutters. This is necessary in the manufacture of bretzels, in order to prevent the caustic lye in which they are boiled from becoming dirty by reason of the flour, thereby impart-

ing to the bretzel a dull and ashy appearance—in other words, destroying the luster or polish which a perfect bretzel always has; and several other patents.

Q. 18. Are the complainants still in possession of the imperfect machines about which you have testified? If so, please state about how much space they would occupy if stored together.

A. Yes; partially so, at least, The *débris* of abandoned bretzel machines and experiments can be found scattered throughout our establishment, as well as in Crestline and other places, and some of it in New York. It would be a hard matter to say how much space it would occupy, but it would amount to a carload, I suppose.

Q. 19. How much time had Lampert & Huber devoted to the development and improvement of machinery for making bretzels before the date of your contract with them, to wit, Jan. 1st, 1879?

A. I should say six or seven years, or about that length of time.

Q. 20. What is Mr. Huber's business?

A. He is a practical machinist and pattern-maker—one of the best I ever knew.

Q. 21. What is Mr. Lampert's business?

A. He is a bretzel maker, having followed the business for a good many years.

Mr. Edson here offers in evidence a model, which is herewith filed and marked, "Complainants' Exhibit, March, 1882. Gilbert H. Stewart, Notary Public," being the model referred to by Mr. Earhart in his deposition herein as the model ordered in March, 1882.

Q. 22. Please examine this "Complainants' Exhibit, March, 1882," now handed you; state what it is, and when it was made.

A. It is a model that was made sometime in March, 1882, to represent the patent sued upon, but which was not

used on account of its not representing fully the invention.

Q. 23. Did you have a conversation with one of the defendants in this cause shortly before this suit was brought? If so, please state the substance of that conversation.

A. I did, with both of the defendants, before the commencement of this suit a short time, in which they admitted to me the infringement of the patent sued upon, and desired to make some arrangement with me whereby the proposed suit would not be brought, and by which they could run the machine in question under an arrangement with the complainants. At a subsequent interview with them, they stated to me that, after advising with Roth, McMahon & Co., of Chicago, they had concluded to fight the suit, stating that Roth, McMahon & Co. had agreed to pay all costs of the suit.

Q. 24. Did you have any conversation about this same time with either member of the firm of Roth, McMahon & Co., as to their having ever made a bretzel machine which infringed the patent sued on? If so, please state the substance of it.

A. I did, with Mr. McMahon, at their office. I asked him whether or not they had made any bretzel machines for any one, and he said that they had not. I told him that I had understood that they had, and if such was the case I desired to know it. He persisted in his denial. Finally, after a long talk about the matter in question, and a very heated one, and after my mentioning the names of two parties to whom they had sold the machines in question, he admitted that they had made them.

Q. 25. In what respect is it that "Complainants' Exhibit, March, 1882," does not resemble your patent sued on, as referred to in question 22?

A. In the flaring apertures or off-bearing scrap passages not being as fully shown or clearly defined as in the patent sued on.

Q. 26. Have you read defendants' testimony in this cause? If so, what have you to say as to the testimony of salesmen and other inexpert witnesses, as to the matters about which they assume to testify, wherein they declare that the exercise of inventive genius was not required to make the invention sued on?

A. I have read defendants' testimony. After the many years of labor that I have had in connection with the development of this machine, and after the time and money expended upon it by Lampert & Huber, and the years that they devoted to its development; after the researches that I have made in order to develop a machine which would produce such a product as desired, I should consider such evidence not only incompetent, but a farce.

Q. 27. Please state how much of your time was given during the years 1879, 1880 and 1881, in assisting to reduce to practice the invention of Lampert & Huber and that of complainants.

A. Nearly all of the working days, all of the Sundays, and nearly all of the sleeping hours. It was an incessant occupation during the days and nights of these years. It called me from one end of the country to the other. It was not only an occupation, but infinite toil, exhausting not only the mind, the body, but the pocket as well, from the effects of which I have not as yet recovered, and physically never expect to.

Cross Examination by Mr. Banning, Counsel for Defendants.

X Q. 28. You have said that one of the merits of your invention consisted in the fact that it was applicable to the ordinary cake or cracker machine. Just state whether you have ever, in a single instance, so applied it.

A. We have, in the making of bretzels in our own factory.

X Q. 29. How did you apply it?

A. By removing the cracker cutter that was attached to

the machine or frame and inserting the bretzel machine in its place, having constructed the frame of the machine so that it could be applied to our Ruger cracker machine.

X Q. 30. Was that a cracker machine made after your invention, and with special reference to the application of your bretzel cutters?

A. It was not. The cracker machine mentioned has been in our factory in use for at least ten years.

X Q. 31. In this model which has been offered as "Complainants' Exhibit, March, 1882," from what machine was the framework surrounding the bretzel die or cutter, and holding it in place, taken or copied? I mean all of the framework represented in this model except the die.

A. It was not taken from any machine whatever, but was made from patterns constructed expressly for the machine—by that I mean the bretzel machine—and we now have those patterns.

X Q. 32. Of course, I understand that these parts were made expressly for this bretzel die; but what I want to know is, to state it in another way, how the cutters or dies used in cracker machines like that Ruger cracker cutting machine are supported or held in place.

A. Our Ruger machine holds the cutter by a rod at each end of the cutter.

X Q. 33. There is a plate through which the die or cutter is forced when it is driven down on to the dough to cut, is there not?

A. Yes, sir.

X Q. 34. And a proper hole or aperture in such plate for the die to pass down through?

A. Yes, sir.

X Q. 35. And the die is lifted automatically from the dough, after the operation of cutting? And if so, how?

A. Yes, sir; it is—by springs or other device.

X Q. 36. And there is a plate above or at the top of such die, is there not?

A. Yes, sir.

Questions 31 to 36, inclusive, and all similar questions, objected to by Mr. Edson, as not proper cross-examination.

X Q. 37. How is the cake or cracker in that Ruger machine, that we have been talking about, expelled from the cutter or die?

A. Some with followers, others with punchers.

X Q. 38. Is not that the only instance in which you have applied your bretzel cutters to work in the ordinary cake or cracker cutting machine? Have you ever so applied it in any other bakery?

A. We have so constructed the cutter that it can be applied to any kind of a cracker machine.

X Q. 39. You say that the Ruger cracker machine you have been using for some ten years. What has it been used to cut during that time?

A. Crackers, cracknells and biscuits.

X Q. 40. What shapes has it cut?

A. Round, square and oval.

X Q. 41. What various forms of cakes or crackers have you seen cut in such or similar machines as the Ruger, up to the time you made your contract with Lampert & Huber, about Jan. 1, 1879?

A. Those are the only forms that I can remember of, except possibly oblong.

X Q. 42. Prior to that time, had you not seen in the market various forms of cakes or crackers, such as birds, animals, fishes, people of different nationalities, letters of the alphabet, etc.?

A. No, sir.

X Q. 43. Nothing of the kind?

A. Nothing of the kind that I can remember of, prior to that time.

X Q. 44. You saw the two cutters mentioned in the deposition of Mr. Roth, one of which represented the letter B and the other of which represented the character &, did you not?

A. Yes, sir.

X Q. 45. If you took out the letter B and the character &, and put a round, or a square, or oval cutter in the place of the letter taken out, those exhibits would resemble the Ruger cracker cutter, that you have used some ten years, would they not?

A. I do not think they would.

X Q. 46. Do you recollect them distinctly?

A. I cannot say that I do recollect them distinctly, yet I have a general recollection of them; but I do not remember how they were arranged in the cutter plates—the upper and lower ones.

X Q. 47. When was work begun on this New York Lampert & Huber machine?

A. In January, 1879, or thereabouts.

X Q. 48. These two staves from the upper and lower cylinders, which have been offered in evidence, came from that machine?

A. They did.

X Q. 49. And that machine was finished early in the spring of 1880?

A. It was.

X Q. 50. Some drawings or pencil sketches sent by you to Mr. Earhart in your letter of March 31, 1880, have been offered in evidence. Are those sketches, except the one changed by Mr. Earhart, as testified to by him, in the same condition they were when you sent them?

A. I think they are. I don't see any evidence of any change in them.

X Q. 51. This one changed by him has the figures 4 and 5 on it. Were they on it when you sent it?

A. Yes, sir; they are my figures.

X Q. 52. Where were these sketches made?

A. Made in the city of New York, at the office of Fowler & Rockwell.

X Q. 53. Who made them, and what were they made from?

A. I made them; they were made from a tin pattern.

X Q. 54. What was the tin pattern made from and who assisted you in making these sketches?

A. The tin pattern was made from a rough, uncouth, trembling sketch made by me. Nobody assisted me in making the sketches.

X Q. 55. Were they not made with a bretzel before you to copy from?

A. No, sir; but from the bretzel that has been ever present with me, in my mind, lo! these many years.

X Q. 56. Was that a bretzel which you had eaten?

A. It was not a bretzel that I had eaten, but an imaginary one, that had cost me several thousand dollars, and which I had swallowed whole.

X Q. 57. What time was it that you visited Chicago and had that conversation you have detailed with Mr. McMahon?

A. It was the time I saw Steckel, a short time before this suit was commenced.

X Q. 58. At that conversation, were not the only patents which you mentioned the Lampert and Huber patents?

A. Being uncertain as to the date of my interview with the Steckels, and as that was about the time of the interview with McMahon, I am unable to answer the question.

X Q. 59. Don't you recollect that it was some time after your interview with Steckels and McMahon before you commenced your suit—that is, three or four weeks;

and that you were waiting until your patent should be issued, which patent was issued March 20, 1883?

A. I do not.

X Q. 60. Did you have a copy of your patent with you and show it to McMahon at that interview?

A. No, sir; not that I remember of.

X Q. 61. If it had been issued, do you think you would have gone to Chicago to make claim of an infringement against prominent manufacturers without taking a copy with you?

A. I will answer that question by asking, by what authority the counsel for the defendants assumes that I went to Chicago for that purpose?

X Q. 62. Did you go for that purpose?

A. I did not; not at that time.

X Q. 63. How many days were you in Chicago, at the time you had the conversation with McMahon?

A. Several days; just how many I could not state; two or three days.

X Q. 64. What hotel did you stop at during that time?

A. I think I stopped at Kuhn's European Hotel, on Clark street, between Madison and Monroe.

X Q. 65. You registered, did you?

A. Oh! yes, and paid my bill.

X Q. 66. I forgot to ask you whether the upper plate in the cutters of your cracker cutting machine, which you have used for ten years or so, was pressed down with the cutters in the operation of cutting. Is that the way it is?

A. The whole thing is pressed down with the cutters.

X Q. 67. While the cutters are being forced through the openings in the lower plate, and as they are passing through the dough on the cloth, is the upper plate pressed down with them?

A. Yes, it is.

X Q. 68. And this is the way it has always been in that machine?

A. Well, I suppose so; so far as I know.

X Q. 69. Some of the crackers, which you have used that machine to cut for the last ten years or so, have had holes in their middles, have they not?

A. Not a one.

X Q. 70. How about the oblong shaped crackers that you have cut?

A. They don't have any hole in the middle; none of the crackers made by us ever had a hole in the middle or any part of them.

X Q. 71. Whenever you have spoken of the Ruger cracker cutting machine, you have meant the McColen machine, have you?

A. I have, having forgotten that the Ruger machine spoken of was in another part of the building.

X Q. 72. All your statements about the Ruger machine and its operations are, then, true as to what you have now called the McColen machine?

A. They are.

WM. M. CRAWFORD.

THEODORE H. BUTLER, being produced, sworn and examined on behalf of the complainants, testified as follows in answer to interrogatories propounded by Mr. Edson:

Q. 1. State your name, age, residence and occupation.

A. Theodore H. Butler; age 51 years; residence, Columbus, O; a manufacturer.

Q. 2. Please state how long you have been engaged as a manufacturer.

A. Since 1852 or 1853. I have been engaged as a manufacturer of crackers, roasted and ground coffee and spices, candy, ginger snaps, lemon crackers, etc.

Q. 3. Have you had any practical knowledge of the art of baking?

A. In 1848 I went to learn the baking trade; worked at that three or four years, I am not certain which, and then went into business and have been in it continually ever since, except from 1862 to 1865.

Q. 4. Are you one of the complainants in this cause, and one of the joint inventors of the invention shown and described in the patent sued on?

A. I am one of the complainants; I am one of the joint inventors.

Q. 5. What action takes place in the dough of a bretzel, immediately after it is cut by a machine or formed by hand —that is, while it is yet in a raw or unbaked condition and before its immersion in the lye?

A. As soon as a bretzel is formed, either by hand or by machine, it at once commences to prove or enlarge, or, you might say, raise as bread raises. When it first comes out of the machine, as soon as it begins to prove, it assumes a roundish form; it fills out its skin, you might say; it enlarges in every direction. When it is proved to a certain amount, the bretzel is then thrown into the lye, and from there it goes into the oven, after being salted.

Q. 6. What part did you take in the development and reduction to practice of the invention covered by the patent sued on in this cause?

A. In maturing this machine we were all frequently in consultation, each one making suggestions, asking each other for advice, and we freely communicated with each other about everything as we went along. By frequently in consultation with each other, I mean Mr. Earhart, Mr. Crawford and myself. Well, the consultations were so frequent, and we had so much talk, pro and con, as to how to build the machine, that I can hardly particularize as to any particular points. If Mr. Earhart and Mr. Crawford were

consulting together on the subject, and I didn't happen to be in the office at the time, and their consultation was as to the practical working of the machine we were trying to build, in dough, they would either send for me at some part of the factory where I might be, or would wait until I came in, to ask advice about it. There is one point in the forming of the die that I suggested: that it be made deeper, so that when the dough was passed under the die by the machine it would give more body to the bretzel; so that when the action of the heat on the dough took place, it would prove in such a manner as to bring the bottom edge of the bretzel, which lays next to the cloth, nearer to the center of the bretzel horizontally, all around.

Q. 7. Are your co-inventors also your partners in business?

A. Yes, sir.

Cross Examination by Mr. Banning, Counsel for Defendants.

X Q. 8. Different kinds of crackers, snaps, cakes, etc., also prove or enlarge after they are cut by the machine, do they not?

A. Some of them do.

X Q. 9. Take the crackers or snaps that are cut on a flat surface, by a machine like your Ruger cracker cutting machine; do they not prove or raise so that the edge that was on the cloth rises up horizontally all around?

A. Well, now, you say crackers. I would like to have the question specify what kind of crackers.

X Q. 10. I do not know all the kinds of crackers or snaps or cakes that you cut on that or similar machines, but do not some of them, if not all, rise in the way suggested in my question?

A. A straight butter cracker, used with a cup cutter, can be made to cup, but not to spring the edge, or raise the edge, or prove the edge, but a very slight fraction.

X Q. 11. As to other kinds?

A. Ginger snaps, perfectly flat; lemon crackers, flat.

X Q. 12. Have you not known some kinds of cakes or crackers, for a great many years, that would prove or rise after being cut by the machine in the way I have suggested, namely, so that the edge that was pressed against the cloth in the process of cutting rose up horizontally all around?

A. I would have to refer to my answer to X Q. 10 on butter crackers, for my answer to that question.

X Q. 13. Do you mean to say that you have never known any kind of cake or cracker to thus rise but a bretzel and a butter cracker?

Question objected to, as assuming that the witness has testified that a butter cracker proves or springs upwardly as does a bretzel, which is not the case.

A. A butter cracker made with a sponge raises similar to the other butter cracker, but not similar to a bretzel.

X Q. 14. Take these ordinary oyster crackers; are they cut on a flat surface?

A. They are.

X Q. 15. They appear about as much rounding on one side as on the other, do they not?

A. No, sir.

X Q. 16. The edge in those ordinary oyster crackers has raised up somewhat, has it not?

A. A very little, compared with the raise we get in the bretzel.

X Q. 17. This raising in the bretzel permits the bretzel to be wholly or partially split open horizontally, does it not?

A. As we tested the bretzel here to-night, it did, after quite hard pressing with the finger nail in the center, horizontally.

X Q. 18. You split or cracked that bretzel horizontally to show us where the edge had risen to, did you not?

A. Yes, sir.

X Q. 19. Does that mark appear on all of your machine cut bretzels, cut with a flat die?

A. Only on those that are slack proven.

X Q. 20. How long have these ordinary oyster crackers, about an inch long and a little over half that wide, been cut by machinery?

A. I would say 25 or 30 years.

X Q. 21. You have a Ruger cracker cutting machine, in your factory, that you have had for some ten years. Did you ever see that machine in operation, and do you understand it?

A. Oh, yes, sir.

X Q. 22. In that machine, the cutters or dies are arranged in series, between an upper and a lower plate, cutting down through holes in the lower plate, are they not?

A. The cutters cut down through the lower plate; they are arranged in series.

X Q. 23. You understand the drawings of the patent sued on, do you?

A. Well, I think I do.

X Q. 24. Look at Fig. 2 of the drawings of the patent sued on, and in order that we may fully understand the arrangement of the cutters in that Ruger cracker cutting machine, or the one so called by Mr. Crawford, and which is situated on the first floor of your factory, and state whether the cutters are not arranged in a frame between plates arranged with springs, rods, etc., just like we see them in that Figure 2.

A. Instead of a Ruger cracker cutting machine, you should call it a McColen machine. Before answering that question, I should want to examine our McColen machine, together with this drawing.

X Q. 25. When did you first see this pencil sketch, marked "Complainants' Exhibit First Sketch?"

Objected to by Mr. Edson, as not responsive.

A. I could not specify times.

X Q. 26. Was it in the condition that you now see it, when you first saw it?

A. I should say it was.

X Q. 27. How long have you used the McColen cracker cutting machine referred to above?

A. We purchased it in 1871 or 1872.

X Q. 28. Did you operate it soon after you got it?

A. Oh, yes; right along, all the time.

X Q. 29. Did it operate then as it does now?

A. Yes, sir.

X Q. 30. What prevents the lower plates in the cutter used in that machine from coming flat down upon the dough?

A. Why, the cutters do come down on to the dough.

Questions 26 to 30, both inclusive, and all similar questions, objected to by Mr. Edson, as irrelevant and incompetent.

X Q. 31. I mean from coming down entirely down upon the cloth carrying the dough. Are there little feet or projections on the bottoms of these plates to hold them the right distance above the cloth?

A. Yes, they do.

X Q. 32. This is the way they have always worked?

A. I think when cracker machines were first gotten out it may have been different; but that is the way this machine has been ever since we have been using it.

THEO. H. BUTLER.

I, Gilbert H. Stewart, a Notary Public of the State of of Ohio, in and for the County of Franklin, do hereby certify that the above named Geo. W. Earhart, Wm. M. Craw-

ford and Theo. H. Butler were by me first duly sworn to testify the truth, the whole truth and nothing but the truth. That the foregoing depositions by them respectively subscribed were reduced to writing by me, except that part thereof commencing with re-direct question 175 in the deposition of Geo. W. Earhart, and ending with the answer to direct question 5 in the deposition of Wm. M. Crawford, which was, by consent of counsel, reduced to writing by Frank A. Davis, Esq.; and the same was reduced to writing in the presence of the several witnesses, and were subscribed by them in my presence, and were taken by consent of counsel, at my office, No. 5 N. High St., Columbus, Ohio, at the time agreed upon, and continued from day to day as herein noted. And I further certify that neither myself or said Frank A. Davis, Esq., are counsel or relative of either party to this suit.

In testimony whereof I have hereunto set my hand and notarial seal this 11th day of April, A. D. 1884.

[SEAL.] GILBERT H. STEWART,
Notary Public, Franklin Co., Ohio.

Fees, taking and certifying deposition, $50. Paid by complainants.

COMPLAINANTS' EXHIBIT CRAWFORD'S MARCH, 1880, LETTER.

Office of Fowler & Rockwell, Machinists and Engineers. Bakers' Machinery a Specialty. Inventors and Patentees of the Letter Biscuits, 87 and 89 Elizabeth street. C. S. Fowler, L. A. Rockwell.

NEW YORK, March 31st, 1880.

GEO. W. EARHART, ESQ.:

Dear Sir:—Your valued favors of 29th to hand, also letters of previous date. I went to see the model at Osgood's yesterday, and examined it carefully, and think it will answer the purpose for which it is intended. It will, however, be quite cumbersome. In a twelve pan reel oven there will be seventy-two common size cracker pans. If you have an elevator large enough to contain 144 pans, don't you think

it will be a large affair—or do you intend having but a few shelves and have them coming and going continually? The machine will have to be built entirely out of galvanized iron, *no wood*, and instead of rope or cords our elevators will have to have galvanized iron cables. Above the elevators there will have to be constructed conductors for carrying off the steam. I would suggest that you attach to the operators, racks, upon which to prove the bretzels as they come from the bretzel machine. You asked what changes I would make in bretzel machines to make them better. There are a number of changes, and changes that are absolutely necessary before we can ever have a perfect working piece of machinery. Our present one is imperfect. In the first place, it was not designed or intended for self panning and cannot be made to pan as at present constructed. All bretzels made on it will have to be properly adjusted upon the pans after they are dropped from the moulds. I will enclose you diagrams which will explain more fully than I can write, and which you will readily comprehend. Another failure of the machine is the discharging *cone*. You will remember that I wrote you some time ago that, in order to prevent the staves upon the upper cylinder from springing, that I had to put in a brace; this brace is in the center of the cylinder, thus: [sketch], which shortens the cone one-half, or in other words, makes two cones instead of one—one on each side of the brace. If it was all in one piece, I do not believe that it would ever discharge the scrap. My remedy for these defects, and to cheapen the cost of manufacturing these machines, are these: First, I would cast the cylinders solid, doing away with staves altogether, and thereby making a cylinder that would not—could not spring. Instead of having the bretzel dies together on the cylinders, as they are now, and which prevents them from panning, I would have them ¼ inch or more apart. I would have all the scrap then, with the exception of the small pieces in the

cutter of the dies, a continuous scrap, which I would carry with a scrap apron to the brake or into the box. The small pieces of scrap from the center of die I would pick up, as we are now doing, by the upper cylinder; this portion of the scrap would be very small proportionately, and what did not naturally tumble out of its own accord could easily be removed by hand, and which could be done when the machine was not running, and without losing any time. Another advantage in having the dies separated would be in their not being so liable to break or chip out on the sharp edges. The cost of making the cylinders would be lessened nearly, if not quite, one half. There is an immense amount of labor expended upon the fitting of the staves and the fastening of the same to the heads of the cylinders, as well as the putting in of the cutting knives, all of which would be done away with by my plans. The only expense attached to the change would be the cost of making new die patterns, and which, in my opinion (if we make any more machines), should be commenced *at once*. The diagrams enclosed will more fully explain matters than I can with the pen. The diagram No. 1 represents the cylinders as they now are, and No. 2 represents the cylinders as they would be by my plan, and showing the scrap and altered arrangement of bretzels. The openings, marked X on No. 1, were not intended to take up the scrap and, consequently, scrap No. 1, 2 and 3 falls out upon the apron or pans. I have remedied this fault in our present machine by closing up the openings X from the inside. The scrap on No. 2 would be a continuous sheet (with the exceptions of 4 and 5), which would be carried off by a scrapping apron attached to machine and which would be but a small additional expense. The bretzels would be delivered upon the pans equal distances apart and would not require any handling whatever. Our present way will require the handling of every bretzel. You are aware that in proving, boiling, as

well as baking, the goods expand or enlarge, and, if they are not separated before hand, will run together or be drawn out of shape. By my plan there would be less bretzels turned out, unless we should increase the length of the cylinder, which could easily be done.

You will please talk the matter over with Mr. B. and let me know what you think about the suggestions made, and if you do not think it will be best to have the new patterns made at once. I have had the opinions of the moulders in regard to casting the cylinders, and they say there is no trouble about making them according to the way we propose to make the patterns. In regard to building future machines, I have some ideas which I will present at some future time (I mean *when* and *by whom* they shall be built).

Hoping you are having a good trade, and well, I am,

Yours truly,

W. M. CRAWFORD.

Proof for final hearing on the part of complainants in rebuttal, taken by consent of parties, in pursuance of annexed notice, before John A. Wiedersheim, Notary Public, in his office, No. 919 Chestnut street, Philadelphia, Pennsylvania, at 9:30 A. M.

Present—Joseph R. Edson, Esq., counsel for complainant.

CHARLES H. APPEL, being duly sworn according to law, deposes and says, in answer to—

Q. 1. What is your name, age, residence and occupation?

A. My name is Charles H. Appel; I am 45 years of age; I reside at Zionsville, Lehigh county, Pennsylvania; and am a physician.

Q. 2. Please state what experience you have had in constructing dies for making bretzels.

A. I commenced making dies about seven years ago; first commenced making the dies of iron, and I found that they would not work right, and then I tried them of hard wood; that done a little better—not satisfactory; finally made them of brass; that was the last. I applied for a patent, which I obtained in 1879—September 2d.

Q. 3. Describe briefly the die shown in your patent.

A. My die comes around in the groove, the edges touching but not crossing, and do not show a twist. I was experimenting to make a die that would show a twist but not accomplish it, so I finally abandoned the idea of making the twist.

Q. 4. What was the extent of your experiments in endeavoring to construct a die which would form a twist?

A. I made half a dozen models before I made an application for a patent, experimenting on that about two years. The die, as I have it now, did not make me so much trouble as it did in trying to get that twist in, and on that account I abandoned the idea of making bretzel machines. Most of my time in experimenting, as also my expenses before making application for patent, were spent in endeavoring to make a twist.

Q. 5. In what part of the bretzel is the twist formed?

A. In about the middle of the bretzel, where the two ends come together and are crossed on each other.

Q. 8. Did you make any experiments after obtaining your patent, in order to secure a twist?

A. I continued making experiments about three years after obtaining a patent, for the purpose of securing a twist, but I could not succeed in getting it, and I dropped the thing altogether.

Q. 7. I understand, then, that your experiments to secure a twist extended over a period of about five years. Aside from your time, how much money did you expend

in this particular line of your experiments, and how much time did you give to this subject?

A. The time and what it cost me might be about $500. I mean that I actually expended in money about $500. This was a matter and subject which I continually thought of and experimented over during the period of five years before I finally discontinued it.

Q. 8. In your opinion, would it require the exercise of inventive genius to make a bretzel die with a twist, or only the skill of an ordinary mechanic?

A. In my opinion, it would take a man of inventive genius to make a bretzel die with a twist.

Q. 9. Have you ever manufactured any of your dies for the trade?

A. No, sir.

CHARLES H. APPEL.

Sworn to and subscribed before me this 26th day of June, A. D. 1884.

[SEAL.] JOHN A. WIEDERSHEIM,
Notary Public.

THOMAS H. KELLER, being duly sworn according to law, deposes and says:

Q. 1. What is your name, age, residence and occupation?

A. My name is Thomas H. Keller; my age is 30 years; I reside at Litiz, Lancaster county, Pennsylvania, and my occupation is an inventor.

Q. 2. Please state carefully what experience you have had, if any, as an inventor and patentee of machines for making bretzels.

A. Martin S. Keller and myself and Christian W. Myers obtained a patent for bretzel machine on May 15th, 1883, No. 277,573. We commenced—I mean Martin S. Keller and myself—in 1879 to invent a bretzel machine. After

that we associated with us Christian W. Myers; then we kept working on that patent since 1879, and are still working on it in improving it. The first machine we built at Lancaster in 1879, at Blickenderfer's machine shop. That was the first experimenting machine and we still have it in our possession. After that we still worked to further the machine in the art of the bretzel. After we had more ideas attached to the one built at Blickenderfer's we went to Reading and had one built with Miller, Prince & Co. We took that machine to Lincoln, where I then resided; we run the machine there and found defects; we then found, that after all the time, trouble and expense in running the machine, it was still defective and that it would be necessary to make a sale of a half interest to get funds in order to continue the experiments in making a machine. We made a sale of one-half interest to M. V. B. Steinmetz, at Lincoln; G. Keebler, Philadelphia, and J. W. Ruger & Co., Buffalo, New York; C. Mueller and J. Kahlmus, Philadelphia. This assignment was soon after the completion of the econd machine, which was built at Reading in 1880, and the consideration was $10,000 in cash and $5,000 out of the first proceeds. After the assignment an agreement was made between the above named parties whereby they agreed as follows: That all of the parties were to expend money in connection with each other for the purpose of improving the said machine, and were to contribute their time and skill in perfecting the same.

Sometime in 1881 J. W. Ruger & Co. commenced to build the third bretzel machine in accordance with the terms of the agreement before referred to. The machine was built, and found to be no improvement on the second machine. Afterwards, in 1883, Thomas H. Keller, Martin S. Keller and Miller, Prince & Co. built the fourth bretzel machine.

Q. 3. How much money, time, labor and material was expended in building said machines?

A. The cost to the present time amounts to $28,500, according to the best of my knowledge.

Q. 4. Are you a practical baker?

A. I am, a practical Litiz bretzel baker.

Q. 5. Describe briefly the construction and operation of your bretzel machine.

A. The dough is first put through the feed rollers; then the pieces are served off by a knife passing through a tapering space between back and roller, which falls in three endless belts; the two outside belts run faster than the inside belt, which brings the dough in proper connection with fingers and movements, which fingers catch the ends of the rolled dough and elevates it and carries the ends around and places them upon the bow of the bretzel, which ends are fastened into the ends of the bow by means of pressure upon them; after that they are deposited upon a reciprocating table.

Q. 6. How many bretzels are formed at a time by your machine, and how many per minute under favorable conditions?

A. One at a time formed and sixty per minute.

Q. 7. What is the standing and reputation of J. W. Ruger & Co. as manufacturers of cracker machinery?

A. To the best of my knowledge they are good, and are one of the four largest manufacturers of cracker machinery and bakers' supplies in the United States.

Q. 8. Have you made any other bretzel machine since the completion of the fourth machine?

A. I have not.

Q. 9. Where is the fourth machine?

A. At Miller, Prince & Co's., Reading, builders of machine, and who built fourth machine.

Q. 10. What is the cost of last machine?

A. It cost $3,000.

Q. 11. What is the standing and reputation of Fowler & Rockwell, of New York city, as machinists and engineers?

A. I think that they rank amongst the foremost as expert manufacturers of cracker machines and bakers' supplies in general.

Q. 12. Are you still working on your machine with a view of making further improvements?

A. Yes, sir.

THOMAS H. KELLER.

Sworn to and subscribed before me this 26th day of June, A. D. 1884.

[SEAL.] JOHN A. WIEDERSHEIM,
Notary Public.

Adjourned until 2 p. m. June 26, 1884.

In pursuance of adjournment until 2 p. m., June 26, 1884, the testimony was taken by John A. Wiedersheim, notary public.

Present—Joseph R. Edson, counsel for complainants.

WILLIAM M. CRAWFORD, being duly sworn according to law, deposes and says, in answer to—

Q. 1. What is your name, age, residence and occupation?

A. My name is William M. Crawford; I am about 43 years of age; my residence is at Columbus, Ohio; and am a wholesale manufacturer.

Q. 2. Are you one of the complainants in this cause?

A. I am.

Q. 3. What interest, if any, has the inventor, Henry

Huber, of Crestline, Ohio, in letters patent sued on in this case?

A. He has an undivided one-fourth interest.

WM. M. CRAWFORD.

Sworn to and subscribed before me this 26th day of June, A. D. 1884.

[SEAL.] JOHN A. WIEDERSHEIM,
Notary Public.

Adjourned until June 27th, 1884, at 9:30 o'clock.

June 27th, 1884, 9:30 o'clock a. m., meeting in pursuance of adjournment from June 26th, 1884, the testimony was taken by John A. Wiedersheim, notary public.

Present—Joseph R. Edson, Esq., counsel for complainant.

WALTER G. WILSON, being duly sworn according to law, deposes and says, in answer to—

Q. 1. What is your name, age, residence and occupation?

A. My name is Walter G. Wilson; I am 39 years of age; I reside at Aldine Hotel, Philadelphia; and my occupation is biscuit baking and cracker baking.

Q. 2. Please give some idea of the extent of your business and standing in the trade as a manufacturer in your line of business.

A. I am amongst one of the largest in the country, and my business runs throughout the United States and foreign countries. I have agencies in London, India, Australia, besides those in the leading cities in the United States.

Q. 3. State briefly what experience you have had in manufacturing bretzels by machinery.

A. My attention was first drawn to the bretzel machine by Mr. Crawford in 1880, and I purchased a machine in 1882. When Mr. Crawford first spoke of this machine, I told him it was impracticable, but that I would like to see it when completed and in working order. I purchased from him a machine with the right to use the same in 1882, con-

ditioned upon my being satisfied with its workings; and in accordance with a promise made him, visited Columbus, Ohio, for the purpose of seeing the machine work. I was, however, thoroughly satisfied in my own mind that it was impracticable and impossible to make a bretzel by machinery, and only went because I had promised to do so, and with the firm idea that a sight of the machine running or working would show that I was right in my impression, and that the conditional purchase would fall through by reason of the failure of the machine to make good, merchantable bretzels. To my surprise, however, a half hour's trial of the machine convinced me that it was a success in every respect, doing even more than was claimed for it. I felt that it was a necessary adjunct to my business, and that it was destined eventually to revolutionize the bretzel business, and accordingly concluded the purchase before leaving the city. Since I have been using the machine, my trade in bretzels has been doubled. The machine is still in use; has given perfect satisfaction in every way; has cost nothing for repairs, which is a very important item. In view of its capacity, durability and economy in running it, and the benefits conferred upon the public, I would say that it is one of the most wonderful pieces of mechanism that has ever been used in the baker's business.

Q. 4. What benefits have the public derived by the introduction of these bretzel machines by the complainants?

A. They obtain an article of better quality at a less price. That the cheapening of the cost of manufacture one-half of the cost of making hand made bretzels has enabled me to use much better material in making bretzels, and still sell them at a much lower price than hand made bretzels. In making a hand made bretzel it requires a room of high temperature. The hands employed in the making of the goods are constantly perspiring, which perspiration is worked into the bretzel. Bretzels made by machinery are

not touched by hand in any way, from the time the dough goes into the machine until they are baked and ready for use, thus making them a more wholesome article of food.

Q. 5. What opportunities have you had for knowing whether a practical working bretzel machine had ever been used in the United States, or in any foreign country, before the introduction of such machines by the complainants?

A. I have had every opportunity which a large manufacturer would have, either by personal solicitation to purchase such machines, or by hearing of them through other manufacturers. So far as my knowledge goes, it is the first practical working machine that was ever introduced to the trade.

Q. 6. Before the introduction of the complainant's bretzel machine, was the manufacture of bretzels a distinct and separate branch of the trade of baking biscuits, crackers, etc., or was the manufacture carried on together?

A. With one or two exceptions, it was a distinct branch of the business.

Q. 7. Have the bretzels which are made on the complainant's machines the general appearance of hand made bretzels?

A. They have the same general appearance, and the difference being only noticeable by those in the trade, except attention was called to it.

Q. 8. What importance do you attach to the creasers in the dies of complainant's machine, which form the twist and show where the ends of the bretzel are lapped upon the bow thereof? What effect would their omission have upon the appearance of the bretzels and their salability?

A. In the first place, there is a vital importance by giving the bretzel the appearance of a hand made bretzel, and it would kill the sale of the bretzel.

Q. 9. What kind of dough can be worked on complainant's machine?

A. Both hard and soft.

WALTER G. WILSON.

Sworn to and subscribed before me this 27th day of June, A. D. 1883.

[SEAL.] JOHN A. WIEDERSHEIM,
Notary Public.

GODFREY KEEBLER, being duly sworn according to law, deposes and says in answer to—

Q. 1. What is your name, age, residence and occupation?

A. My name is Godfrey Keebler; my age is 62 years; my residence is at southeast corner 22d and Wallace Sts., and my occupation is a cracker and cake baker and bretzel manufacturer.

Q. 2. State briefly what experience you have had in constructing machines for making bretzels?

A. I became interested in a machine for making bretzels in connection with Martin S. Keller, Thomas H. Keller, Christian W. Myers, M. V. B. Steinmetz, J. W. Ruger & Co., C. Mueller and J. Kahlmus. Thomas H. Keller, Martin S. Keller and Christian W. Myers obtained a patent for a bretzel machine on May 15, 1883, No. 277,573, and I, in connection with parties above mentioned, purchased a half interest in said machine from Martin S. Keller, Thomas H. Keller and Christian W. Myers. About 1880 Mr. Steinmetz called on me, and knowing that I had market for more bretzels than I could furnish, and he told me that he had a machine for making bretzels and wanted me to go to Lincoln, Lancaster county, Pennsylvania, to see it. I went there in 1880 and saw the machine, upon which Keller and Myers had a patent allowed. The machine was put into operation for the purpose of making bretzels and did make some per-

fect bretzels, but not enough to make it practical and economical for working purposes, as it only made on an average about twenty-five per cent of perfect bretzels. It would only form one at a time, and calculated to run 60 bretzels per minute, including perfect and imperfect bretzels. I pointed out to them various defects in the machine. They said that they could remedy those defects and make all the bretzels perfect, or nearly so. And upon that representation, Messrs. Ruger, and the other parties above named, and myself, bought a half interest, and Martin S. Keller was to superintend the construction of the machine. We paid $15.000 for the half interst. The machine was built under Keller's supervision by Ruger, of Buffalo, and after its completion it did not work much better than the other. This machine was in my place of business and I had it running there, and I found that it would not run with any economy or advantage and abandoned it. About two years afterwards Miller, Prince & Co., of Reading, Pennsylvania, who are practical machinists, and who built the first machine, undertook to build another machine at their own expense and risk, and about a year ago last September completed the machine and sent it down to my bakery in Philadelphia, and it was put up and run under the supervision of Martin S. Keller. It was there about six or seven months, and it was run off and on and various alterations and improvements were made on it; and while it worked better than either one of the other two, the bretzel was not as good as hand made, and would not make a sufficient quantity that would enable me to sell much cheaper than hand made bretzels, and in consequence of which I refused to purchase said machine.

Q. 3. What were the defects in the said machine?

A. It would not make a sufficient number of perfect bretzels and they would break much easier than hand made. The machine was complicated. We could not make enough

bretzels to enable us to sell them at lower price than hand made bretzels and, thereby, make a profit thereon. This machine was taken from my bakery and is now in the machine shop of Miller, Prince & Co. with a view to its further improvement.

Q. 4. Were Miller, Prince & Co. paid for constructing this machinery?

A. Not that I know of; they were to build it at their own risk, and when it was satisfactory to me the price was to be agreed on, and so far as I know they still own the machine, they not having been able to sell it.

Q. 5. As a matter of fact, are you not one of the largest hand made bretzel makers in the United States, and how many can one make in a day?

A. As far as I know of, I am. About 32 pounds per day?

Q. 6. Have you ever seen or heard of any practical working bretzel machines?

A. None except that manufactured by complainants.

GODFREY KEEBLER.

Sworn to and subscribed before me this 27th day of June, A. D. 1884.
[SEAL.] JOHN A. WIEDERSHEIM,
Notary Public.

STATE OF PENNSYLVANIA, CITY AND COUNTY OF PHILADELPHIA, } ss.

I, John A. Wiedersheim, a Notary Public in and for the City and County of Philadelphia and State of Pennsylvania, do certify that Charles H. Appel, Thomas H. Keller, William M. Crawford, Walter G. Wilson and Godfrey Keebler were by me severally sworn to testify the truth, the whole truth, and nothing but the truth, and that the depositions by them respectively subscribed as above set forth were reduced to writing in the presence of the witnesses respectively, and were respectively subscribed by said witnesses and

were taken, by consent of parties, on the 26th day of June, A. D. 1884, and adjourned to June 27th, A. D. 1884, at my office, rooms 2, Record building, No. 919 Chestnut street, Philadelphia, Pennsylvania, and that I am not counsel or attorney of either party, or otherwise interested in the event of said suit, or a relative of either party.

Witnesss my hand and seal of office the days and year aforesaid. JOHN A. WIEDERSHEIM,

[SEAL.] *Notary Public.*

To Messrs. Banning & Banning, Solicitors for Defendants.

The said defendants are hereby notified that on Thursday, June 26th, 1884, between the hours of 9 a. m. and 6 p. m. of said day, at the office of John A. Wiedersheim, notary public, No. 919 Chestnut street, Philadelphia, Pennsylvania, the said complainants will, before said John A. Wiedersheim, notary public, proceed to take the depositions of Dr. C. H. Appel, of Zionsville, Pa.; Thos. H. Keller, of Litiz, Lancaster Co., Pa.; G. Keebler, of Philadelphia, Pa.; Walter G. Gibson, of Philadelphia, Pa.; and said complainant, W. M. Crawford, of Columbus, Ohio, as witnesses in behalf of said complainants, to be used and read in behalf of said complainants in rebuttal, upon the final hearing of the above entitled cause; and that the taking of said depositions will be continued from day to day until all are taken, when and where you can appear and cross-examine said witnesses if you so desire.

EDSON BROS., AND FRANK BAKER,
Solicitors for Complainants.

We hereby accept service of above notice this 17th day of June, 1884, and we waive the appointment of said John A. Wiedersheim as a special examiner, and agree that said depositions shall be read in same manner as though taken before a regularly appointed special examiner.

BANNING & BANNING,
Defendants' Solicitors.

Proofs for final hearing taken on the part of the complainants in the above entitled cause, pursuant to the 67th Equity Rule, as amended, before James Sangster, special examiner, at his office, in Buffalo, N. Y., August 26th, 1884.

Present, Frederick R. March, Esq., of counsel for complainants, and Ephraim Banning, Esq., of counsel for defendants.

JAMES W. RUGER, a witness produced, sworn and examined on the part of the complainants, deposes and testifies as follows, in answer to questions by Mr. March:

Q. 1. State your name, age, occupation and place of residence.

A. My name is J. W. Ruger; occupation, manufacturer of biscuit machinery; age, 48 years; past residence, Buffalo, N. Y.

Q. 2. You have resided here how long?

A. I have resided here since April, 1860. I have been engaged in the manufacture of cracker and biscuit machinery since that time and am now so engaged.

Q. 3. Have you had any experience in the manufacture of bretzel machinery during that time?

A. I learned of an invention at a place called Lincoln, Pa., and I went there to see the machine by request of the inventors, and saw the machine and was induced to buy an interest in the patent. The machine was in a very imperfect state when I went there. I thought the invention could be perfected and was induced to buy an interest. Mr. Godfrey Keebler and myself took a half interest in it, for which we agreed to pay fifteen thousand dollars. I paid of my part of the agreement five thousand dollars in cash. After this agreement was consummated I brought the crude machine they had there home to Buffalo, also brought one of the inventors; went on and made patterns on a new machine entirely, taking me a little over six months to get the ma-

chine completed, using about, or very near, five thousand dollars in completing the machine, besides my own time and brother's. My brother gave almost his exclusive time to it. I afterwards found that the machine was a failure, as we met with obstacles we could not overcome. The inventor claimed that he could if it was in a bakery where he could get the proper dough. Mr. Keebler came here and saw the machine and thought the difficulties could be overcome if he could get it into his bakery where he could get the dough made properly. I then shipped the machine to Mr. Keebler's bakery, in Philadelphia, where it was experimented with for over a year. We then concluded that that machine would not work. The inventor wanted to go and get up an entirely new machine, using the same principle, but a different mechanical construction. They assured Mr. Keebler and me that they could make a success of it. We then agreed to pay one half of the expense, provided it did not exceed twelve hundred dollars, to the best of my recollection. That machine was constructed and placed in Mr. Keebler's bakery in Philadelphia. After trying to work it for several months, I went to Philadelphia to see it run and pronounced it a failure; the same difficulties arose in it that did in the first machine. It was a failure and I refused to pay anything more, and gave up all hope of getting a machine to work on that principle.

Q. 4. Are you acquainted with Jacob Roth and John McMahon, of the firm of Roth, McMahon & Co., of Chicago, Illinois?

A. I am acquainted with them, and have been acquainted with Roth for eighteen or twenty years, and with Mr. McMahon for six or seven years.

Q. 5. Do you know their general reputation as manufacturers?

Objected to by defendants' counsel as irrelevant, immaterial and incompetent.

A. I think I do.

Q. 6. Do you know of their using patented improvements?

Same objection.

A. I know of their using inventions that are advertised as patented property, and I know that they have been told that such is the case.

Q. 7. You say they have used patented inventions that they have no right to use. Now, what do you say as to their reputation; is it good or bad?

Same objection.

A. I think it is bad.

Q. 8. Have they used more than one patent that they have no right to use, to your knowledge or from what you know from the speech of people?

Same objection, and as calling for hearsay evidence.

A. To my knowledge, they have several of my own patents in use, without authority.

Q. 9. Do you know of their having used the patents of other parties without authority?

Same objection.

A. In my judgment, I do.

Q. 10. Did you ever have any conversation with Jacob Roth in reference to this suit?

A. The last time I saw Mr. Roth in my office, which was in the summer of 1883, he then told me about a bretzel cutter they were making, and offered to send me castings from his patterns. I told him there was a suit on the bretzel cutter pending. He told me that was all decided, and they were all clear of it.

Q. 11. Did he say to you that it had been decided in their favor?

Same objection.

A. He said in those words, that it had been decided, and they were clear of it.

Q. 12. Did he then offer to sell you dies for making bretzel cutters?

A. He offered to send me castings for making the dies for this same cutter—the common bretzel cutter—to fit any cracker machine. I mean the same cutter that is involved in this suit, and for which plaintiffs sue for.

Q. 13. What impression did you get as to this suit from what Mr. Roth told you?

Objected to as immaterial, irrelevant and incompetent.

A. I got the impression that to make the cutter was public property, and yet with simply Roth's word I would not go on and advertise it.

Q. 14. When did you know it was not true?

Same objection.

A. When Mr. Crawford came to me in Cincinnati a short time ago.

Q. 15. Do you now understand that Roth, McMahon & Co. have no right to make or send to any one bretzel cutters now in suit?

A. I should consider I have no right, when there is a suit pending. I would consider that they have no right until this suit is decided.

Q. 16. What is the standing of Fowler & Rockwell, of New York city, as machinists and engineers? Do you know them; and, if so, how long?

Same objection.

A. I have known them at least ten years. I consider their standing as machinists and engineers first-class. Mr. Fowler I consider as good a workman as there is in our business to-day. Mr. Rockwell is not a professional machinist.

Cross Examination by Mr. Banning.

X Q. 17. Your answer to question 15, direct examina-

tion, is made from what Mr. Crawford told you at Cincinnati, is it not?

Objected to as being irrelevant.

A. Question 15 was answered on the strength of what Mr. Crawford told me at Cincinnati. He told me the suit was still pending; and when there is a litigation pending on a patent, I consider no outside party has a right to manufacture until it is decided.

X Q. 18. Did Mr. Crawford tell you at that time, or at any other time, that the injunction granted in this case in April, 1883, was afterwards, and immediately upon presentation, set aside and dissolved by the court, and that the defendants and Roth, McMahon & Co. then gave a bond to cover all damages which might in any way arise from their operations, which bond was given and accepted as a condition to future use or operations?

Objected to by complainants' counsel as irrelevant, incompetent, not bearing upon the direct examination, and hearsay.

A. No.

X Q. 19. Did he tell you anything about the injunction having been dissolved and a bond given?

Same objection.

A. He did not.

X Q. 20. If the facts were as stated in my second cross question—that the injunction was dissolved and a bond given to cover the damages—would you then consider that Roth, McMahon & Co. had no right to manufacture bretzel cutters during the pendency of this litigation?

Objected to as calling for an opinion, and that it is incompetent and irrelevant.

A. I should consider they had no right as inventors or manufacturers, but took their chances, on the strength of the bond, as to how the suit might be determined in case they did manufacture.

X Q. 21. Do you remember just what Mr. Roth said to you about this suit when he was at your office about a year ago—that the injunction had been dissolved, or that the suit had been finally decided?

Objected to as improper, irrelevant and incompetent as a cross examination.

A. He said nothing about the injunction, but said the suit had been decided and they were all clear; that is about the substance of it.

X Q. 22. Did you pay much attention to what was said at the time?

A. As much as one man would pay to another in conversation, but probably not as much as if I had been an interested party.

X Q. 23. You are a rival in business with Roth, McMahon & Co., are you not?

A. I consider they follow me in business, as coming later and in imitation of machinery.

X Q. 24. You both hold patents relating to bakers' machinery which each claims the other infringes, do you not?

Same objection, and not bearing upon the question.

A. I don't know.

X Q. 25. You claim that they infringe your patents, or patents in which you are interested, do you not?

Same objection.

A. I decline to answer that question, for the reason that the other party has given out around the country, in order to make sales of their machinery, that I infringe their patents. I despise that sort of competition, and wish to make no such assertions until I make them in a substantial way.

X Q. 26. As I understand you, the bretzel machine which you and Mr. Keebler took an interest in, as stated in your direct examination, is the one shown in patent No.

277,573, issued to Thomas H. Keller and others, May 15, 1883?

A. Yes, sir.

X Q. 27. That is a large, complicated and expensive machine, is it not?

A. Not necessarily very large, but quite complicated, and therefore expensive, requiring fine workmanship to make it.

X Q. 28. It was not at all like the complainants' bretzel cutter, or the bretzel cutter which the complainants claim, as shown in patent No. 274,264, now in suit, was it?

A. No, sir.

X Q. 29. Do you think that the success or failure of the Keller machine had any bearing on, or relation to, the bretzel cutter shown in patent No. 274,264?

A. No, sir.

X Q. 30. It is common in your business, when you want a die or cutter to make a product of any particular form or shape, for such form or shape to be given to the workmen, for them to make the die or cutter therefrom, is it not?

Objected to as being improper and irrelevant, and not pertaining to the issue.

A. We give our workmen our orders, and they work according to them.

Re-Direct Examination by Mr. March.

R-d. Q. 31. In answering question No. 15 on the direct examination, did you speak from your own convictions and judgment, or from what Mr. Crawford told you?

A. I spoke from my own judgment.

JAMES W. RUGER.

WILLIAM M. CRAWFORD, a witness produced, sworn and examined on the part of the complainants, deposes and

testifies as follows, in answer to questions by Mr. March:

Q. 1. Are you one of the complainants in this cause?

A. I am.

Q. 2. Have you testified heretofore in this cause, on several occasions?

A. I have.

Q. 3. At the hearing in Philadelphia you testified, in answer to the second interrogatory—What interest, if any, has the inventor, Henry Huber, of Crestline, Ohio, in the letters patent sued on in this cause?—that he has an undivided fourth interest, did you not?

A. I did.

Q. 4. Please explain more fully just what interest he has in the patent sued on, how and when he acquired it, what was the consideration given therefor, and whether he holds an interest in the title of the patent, or otherwise.

Objected to as immaterial, irrelevant and incompetent.

A. The interest held by Henry Huber extends simply to an article of agreement under which he was to be given one-fourth of the net profits, etc., but that we were to retain the title of the patent and have the exclusive control of the manufacture and sale of the machines and the granting of licenses and other matters pertaining to the business. The consideration was his long service before and after his connection with us in working up his own line, by agreeing to give him a one-fourth interest in the profit derived from any invention made by us pertaining to bretzel machinery. This agreement was made, I think, or, as near as I can recollect, in 1880 or 1881, and it is still in force.

Cross-Examination by Mr. Banning.

X Q. 5. You stated in your deposition at Philadelphia, that Mr. Huber owns a fourth interest in the title to the patent sued on in this cause, did you not?

A. I inadvertently said patent, when I should have said profits.

X Q. 6. Have you examined the instrument between your firm and Mr. Huber since giving that deposition?

A. No, sir; I have not.

X Q. 7. Then how do you know now which is right—patents, or profits—in any other way than by information or advice from your counsel?

A. By recollection of my verbal agreement with Mr. Huber, and by conversation with my partners.

X Q. 8. Will you be kind enough to produce the letter from your counssl which you read or examined just before giving your last answer and allow it, or such part of it as relates to this matter, Mr. Huber's interest, to be made part of your deposition?

Objected, as being improper, irrelevant, incompetent and a private communication from counsel to client.

A. I respectfully decline to put this communication in evidence without the consent of my counsel in Washington, for the reason that it is a private communication, consisting in part of instructions to counsel in Buffalo respecting the case.

X Q. 9. Mr. Huber's interest extends to one-fourth of everything that is ever realized out of the patent in suit, does it not?

A. It does, and to all other patents which we are interested in or control, pertaining to bretzel machinery, so far as the net profits arising from the bretzel machinery business, by sales, royalties, or otherwise, is concerned.

Re-Direct Examination by Mr. March.

R-d. Q. 10. Does Mr. Huber own any part of the legal or equitable title in the patent now here in suit?

Objected to as already fully answered, as being a question of law, and because it does not appear that the witness knows the difference between a legal title and an equitable title.

A. He does not.

R-d. Q. 11. Has he any interest except as by profits on sales, royalties, etc.?

Objected to as already fully answered, and defendants now give notice that they will move to suppress this whole deposition, inasmuch as it consists in mere oral statements in reference to an agreement in writing, and is therefore not the best evidence, and is otherwise inadmissible to show the terms of said agreement.

A. He has not.

Re-Cross Examination by Mr. Banning.

R. X Q. 12. Do you mean in any way to limit or qualify your answer to my cross-question 5 by your last above answer, or not?

A. I do not.

WM. M. CRAWFORD.

I, James Sangster, special examiner, hereby certify that all the proceedings aforesaid were had as stated; that I was attended by Frederick R. March, Esq., and Ephraim Banning, Esq., of counsel, respectively, for the parties to the cause named in the caption hereto and by the witnesses James W. Ruger, and William M. Crawford, at the time and place stated; that said witnesses were first severally sworn by me to testify the truth, the whole truth and nothing but the truth in said cause; that their depositions as contained in the foregoing questions and answers were written by me in their presence and in the presence of said counsel, and read over to them, and signed by them respectively, as and for their depositions in said cause; and that I am not attorney, or of counsel for either of said parties or in any way interested in the result of said cause.

In witness whereof I have hereunto set my hand this 25th day of August, A. D. 1884.

JAMES SANGSTER.
Special Examiner.

Examiner's fees, ten dollars, paid by complainants.

AFFIDAVITS OF WILLIAM M. CRAWFORD.

It is hereby agreed that the affidavits of Wm. M. Crawford, hereto attached, be read, used by the complainants in the final hearing of this cause, and have the same force and effect as though said affidavits were depositions and the affiant subjected to cross examination, and the letter and agreement referred to in said affidavits duly proved; but the defendants object to each and every statement thereof, as immaterial, irrelevant and incompetent.

THE STATE OF OHIO, } ss.
FRANKLIN COUNTY. }

William M. Crawford, being first duly sworn, deposes and says that he is now, and was on July 21st, 1880, a member of the firm of Butler, Earhart & Co., of Columbus, Ohio; that said firm wrote a letter to Henry Huber, of Crestline, Ohio, on the 21st day of July, 1880, of which the following is a copy, the original being in the hands of the said Henry Huber, to wit:

COLUMBUS, O., July 21, 1880.

H. HUBER, Esq.,

Crestline.

Dear Sir:—Your favor of this date to hand, and in reply would say, that we never had any desire to exclude you from any improvements we might make in bretzel machinery. Our desire is to perfect our machine and divide the profits according to our agreement with you. We do not desire to take advantage of any technical clause that may be in our article of agreement. Whatever improvements we may make in the machine we will share with you. *Your* course with us has been fair and honorable, and you

can be assured that we will take no advantage of you in any way. Very truly yours,

BUTLER, EARHART & CO.

W. M. CRAWFORD.

Sworn to and subscribed before me this 23d day of September, A. D. 1884.

A. H. FRITCHEY,

Notary Public, Franklin County, Ohio.

COLUMBUS, O., July 7th, 1884.

Whereas, Heretofore, to wit, in the year 1880, the parties of the first part agreed to pay to the party hereto of the second part one-fourth of the net profits arising from an invention made by the parties pertaining to bretzel machinery; and,

Whereas, The party of the second part is desirous of having the agreement reduced to writing; and,

Whereas, The said parties hereto of the first part have obtained letters patent of the United States for improvement in bretzel machines, which letters patent of the United States are numbered 274,264, dated March 20th, 1883.

Now, Therefore, This agreement between Butler, Earhart & Co., of Columbus, Ohio, the parties of the second part, and Henry Huber, of Crestline, Ohio, the party of the second part,

Witnesseth, That the said parties of the first part agree to pay over to the party of the second part one-fourth (¼) of the net profits derived by them from the sale of Bretzel Machines containing the improvements patented to them in lettters patent of the United States numbered 274,264, or

from royalties from their licences granted under said patent.

THEO. H. BUTLER,
GEORGE W. EARHART.
WM. M. CRAWFORD.

Witness, CHAS. R. THOMPSON.

THE STATE OF OHIO, } ss.
FRANKLIN COUNTY, }

William M. Crawford, being first duly sworn, deposes and says that he is now and was, at the time that the agreement hereto attached was made, a member of the firm of Butler, Earhart & Co., of Columbus, Ohio, and that the said agreement is a duplicate, the original being in the hands of Henry Huber, at Crestline, Ohio.

W. M. CRAWFORD.

Sworn to and subscribed before me this 23d day of September, 1884. }

A. H. FRITCHEY.

Notary Public, Franklin Co., Ohio.

DEFENDANTS' EVIDENCE IN REPLY.

Testimony taken on behalf of defendants, before me, E. F. Hubbard, a notary public in and for Cook County, in the State of Illinois, this 29th day of April, 1884.

Present—Thomas A. Banning, Esq., for defendants, and Frank Baker, Esq., for complainants.

JACOB ROTH, a witness recalled for the defendants, in answer to interrogatories by Mr. Banning, testified as follows:

Q. 1. You have been examined before in this cause, have you not?

A. I have.

Q. 2. I believe that time you were examined before a stenographer?

A. Yes, sir.

Q. 3. I call your attention to two exhibits that were introduced in evidence at the time of your other examination, one of which represents a cutter with the letter "B" in it, marked "Defendants' Exhibit No. 14," and the other of which represents a cutter with the character "&" in it, and marked "Defendants' Exhibit No. 15," and ask you to state whether these exhibits were produced by you as old original cutters, or to represent old styles of cutters.

Complainants' counsel objects to the question as incompetent and leading in form.

A. To represent old styles of cutters.

Q. 4. From what were these two exhibits made?

Same objection.

A. They were made from the old patterns that were made in the year 1877. We have those patterns in our possession now.

Q. 5. Do you mean that they were made from these old patterns in your possession in all respects, or not?

Same objection.

A. They were made from those old patterns in every particular, as those old patterns were first made in 1877.

Q. 6. How as to the letters and characters represented in these two exhibits?

Same objection.

A. They are made just the same as the patterns.

Q. 7. How long have you known of cutters like these two exhibits, as to everything except the letter and character, being made and used?

Same objection.

A. I made cutters the same as these two exhibits in the year 1859, and they were in use long before that.

Q. 8. How extensively, if you know, have cutters like these two exhibits, as to all the features represented in them except the letter and character, been used in this country since you began to make them in 1859?

Same objection.

A. They were in general use. Every baker that had a cracker machine has used them. They have been commonly used since 1859 and before.

Q. 9. State whether or not you made any cutters to cut dough into the letter and character represented in these two exhibits, from the patterns which you have in your possession, and which you say were made in 1877?

Same objection.

A. My firm of Roth & McMahon made the first cutters from those patterns February 16th, 1878. We made another one from them February 28, 1878. We have made from those patterns right along ever since, and our books will show the dates of the orders. The dates above given were taken from our books. The cutters so made were sold to bakers and used.

Q. 10. State how long since you have known of other letters of the alphabet being made into cutters and used, or

how long since you have seen cakes or crackers cut into the various shapes of the letters of the alphabet.

Same objection.

A. I have known them to be cut into crackers in the year 1877. They appeared in the markets that year.

Cross Examination by Mr. Baker.

X Q. 11. Can you give the name of the person or persons to whom you furnished the cutters you say you made on February 16th and February 28th, 1878?

A. We made one for David Forester, of Cincinnati, Ohio— I think both a "B" and a character "&"—and another for Mason, of Baltimore, Md. I think he also got both. Sometimes customers would order the whole alphabet, and sometimes selections from it.

JACOB ROTH.

JOHN MCMAHON, a witness produced, sworn and examined on the part of the defendants, in answer to interrogatories by Mr. Banning, deposes and testifies as follows:

Q. 1. State your name, age, residence and occupation.

A. Age, 33; occupation, manufacturer of machinery; residence, 235 Warren avenue; name, John McMahon.

Q. 2. Are you a member of the firm of Roth, McMahon & Co., of this city?

A. I am.

Q. 3. Is the Jacob Roth, who has just testified, your partner?

A. He is.

Q. 4. How long have you been engaged in your present business?

A. Since '75.

Q. 5. State how long since you first saw cutters for cutting crackers, etc., into various shapes.

Question objected to by complainants' counsel, as incom-

petent and improper at this time, after defendants' proofs were closed and complainants had taken proof in rebuttal.

A. In 1875.

Q. 6. How were they made?

A. Just like these models, except that they did not have the letter "B" and character "&."

Q. 7. Do you remember of Mr. Crawford, one of the complainants, calling at your place of business before the commencement of this suit?

A. I do.

Q. 8. You may state, as nearly as you can remember, what was said.

A. There was a great deal said, and it is hard to remember it all. One thing he said, he understood we were infringing on his bretzel cutter. He then asked me if we were making bretzel cutters, and I told him we were. He asked me then if we had made any, and who for, which I refused to tell him.

Q. 9. State whether or not at that time you had ever seen or heard of the patent in suit.

A. To the best of my recollection, I had never heard of it; I am really positive that I had never heard of it at that time. Mr. Crawford was the first to tell me about that patent, and I am not certain whether he told me about it at that interview or at another call. He called several times at our place.

Q. 10. At the time Mr. Crawford first called and claimed that you were infringing his patent, did you know of his having a patent on any kind of a bretzel cutter?

A. I had heard of his having a patent on a cylinder machine.

Cross Examination by Mr. Baker.

X Q. 11. How many times did Mr. Crawford call on you

during his visit to Chicago at the time you have mentioned?

A. I do not remember.

X Q. 12. Well, about how many?

A. Well, I don't want to guess at it as I cannot come anywhere near it. Mr. Crawford came here both before and after that time, and would be here several days at a time.

X Q. 13. You refused to let Mr. Crawford see the bretzel cutters that you were making, did you not?

A. I did.

X Q. 12. Or to tell him for whom you had made, or to whom you had sold any bretzel cutters?

A. Yes; I did refuse.

X Q. 15. Did not Mr. Crawford, shortly after this conversation which you have testified about, come back to your place and tell you that the defendants, the Steckel Bros., were using a bretzel cutter made by you?

A. He did; I think he told me that at our first interview.

X Q. 16. And was not this suit brought during Mr. Crawford's same visit to Chicago, and very soon after he told you the Steckel Bros. were using a bretzel cutter made by you?

A. Well, I don't know that. He told me at the last talk that he was going home that night, and several days after that, I don't remember how many, I saw in the paper that this suit had been brought.

X Q. 17. The bretzel cutter made by your firm for Steckel Bros., in January, 1883, was the first bretzel cutter your firm ever made, was it not?

A. I believe it was.

X Q. 18. And that was brought to you by the Steckel Bros. for development and improvement, was it not?

A. No; I don't think they brought the cutter to use. I think they brought the size in plaster paris or casting, I am not entirely clear which; I don't know whether it was in

plaster paris, brass casting, iron casting, or just how it was. They did not bring it to us to develope, but simply to show us the size of bretzel they wanted to cut.

X Q. 19. Will you swear that they did not bring to you a cutter of brass with which they had cut or attempted to cut bretzels?

A. No; I say before, I did not know whether it was brass or iron, or some other material.

Re-Direct Examination by Mr. Banning.

R-d. Q. 20. At that first interview, when you told Mr. Crawford that your firm had not infringed the complainants' patent, what patent did you have reference to?

A. I had reference to this cylinder machine patent.

JOHN MCMAHON.

Defendants' counsel offers in evidence letters patent of the United States No. 25,767, to John H. Shrote, October 11, 1859; No. 139,217, to J. Webster, May 20, 1873; No. 190,018, to Henry Eazinger, April 24, 1877. To each of which said letters patent the complainants, by their counsel, object, as improper and incompetent evidence at this stage of the case.

Subscribed and sworn to before me this 29th day of April, 1884.

E. F. HUBBARD,
Notary Public.

Proofs taken on the part of the defendants for final hearing before E. F. Hubbard, a Notary Public in and for Cook County, Illinois, at 60 and 61 Honoré building, Chicago, October 14th and 15th, 1884.

Present, Thomas A. Banning, counsel for defendants; no one appearing for the complainants. Whereupon the following proceedings were had:

WILLIAM NICHOLS, a witness produced, sworn and examined on the part of the defendants, in answer to interrogatories by Mr. Banning, deposed and testified as follows:

Q. 1. State your name, age, residence and occupation.

A. William Nichols; 38; 63 West Lake St.; pattern and model maker.

Q. 2. What experience have you had as a pattern maker?

A. Twenty-five years at least.

Q. 3. How long in the city of Chicago?

A. Since '69.

Q. 4. What kind of machinery have you been required to make patterns for?

A. All kinds of machinery.

Q. 5. Did you ever make patterns for machinery used by bakers?

A. Yes, sir.

Q. 6. Do you know what a cutter, or die for cutting dough is?

A. Yes, sir; very well.

Q. 7. Did you ever make patterns for such dies or cutters?

A. Yes, sir; a great many of them.

Q. 8. What particular kind of dies for bakers have you ever made?

A. I have made all the kinds that are used in bakeries.

Q. 9. Did you ever make what are called flat dies—that is, dies to cut on a flat surface?

A. Yes, sir.

Q. 10. What is a pattern?

A. It is exactly the same as the die, and it is used as a pattern from which to make other dies like it—to make as many as you choose of the same kind.

Q. 11. Do you know what a bretzel is?

A. Yes, sir.

Q. 12. Did you ever see them?

A. Yes, sir.

Q. 13. How are these dies made?

A. They bring me the design that they want made either on paper or, in regard to cracker machinery, either the cracker, if you like, or anything; it makes no difference; whatever they want made is brought to the pattern maker and he can make it.

Q. 14. Then, if a person wanted a die to cut bretzels or other forms of crackers, or cakes, or jumbles which were old, he would bring you either one of the articles itself or a design or drawing of it. Is that what you mean?

A. Yes, sir; that is exactly what I mean.

Q. 15. About how many different kinds of dies for use in bakers' machinery, to cut different forms and configurations, have you ever made?

A. About how many?

Q. 16. Yes, sir.

A. Well, I think their name is legion. I cannot very well tell you. I worked on that kind of work for about three years steady and during that time I made different forms for dies all the time, as customers might want them, from a plain cracker up to the fancy menagerie cutter, to cut animals, men, and figures of all kinds.

Q. 17. I will ask you whether it requires, in your opinion, any invention to make such dies?

A. Well, no more than being pattern maker; if it is invention to learn the trade of pattern making it is an invention to make a cutter. It requires simply the skill of a pattern maker. When a form is given to me or any other skilled pattern maker to make a die to cut such form, we simply apply our knowledge and mechanical skill as pattern makers to make it.

Q. 18. In making dies to cut an article like a pretzel, where such article has been furnished to you as a guide or sample, how nearly do you follow the various marks and configurations which it contains?

A. We follow the design closely, with the exception of the shrinkage of metals; we make proper allowance for that in making our patterns. Every pattern maker understands that. If told to produce in the dies all the crosses and marks shown in the product or article furnished us, which such die is intended to cut, we make the patterns or dies so as to show such marks or creases.

Q. 19. State whether, in your opinion, it would require any invention to take a bretzel—say a hand made bretzel—as a sample or pattern and make a flat die to cut such bretzel.

A. No invention whatever would be required; only the skill of a pattern maker.

Mr. Joseph R. Edson, counsel for complainants, who has just appeared, objects to the foregoing testimony, *first*, as improperly adduced and new matter; *secondly*, as calling for opinions and questions of law which it is the province of the court to pass upon; *thirdly*, as giving expert testimony when no foundation has been laid therefor; *fourthly*, that the testimony in chief shows the incompetency of the witness to express an opinion as to what does or does not constitute invention.

Cross Examination by Mr. Edson.

X Q. 20. Have you ever made a pattern or die for a bretzel machine?

A. No, sir.

X Q. 21. Have you ever seen a bretzel machine?

A. No, sir.

X Q. 22. Have you ever seen bretzels made by machinery?

A. No, sir.

X Q. 23. Have you ever seen bretzels made by hand?

A. I have seen——

X Q. 24. That is not the question. Have you ever witnessed the manufacture of bretzels by hand?

A. No, sir; I have not.

X Q. 25. What mechanical feat or inventive act, in your judgment, is necessary to constitute invention?

A. That is a hard question to explain; but it must have some original feature—it must have some original feature connected with the machine that is invented; that is, whatever movement you want to overcome or invent has got to be studied out. That is all I know about the feat—about its being inventive.

X Q. 26. If the very best mechanics and engineers had worked for years, and with the expenditure of thousands of dollars, to produce a machine which would make a given product, and failed to do so, and another, after years of labor, study and expenditure of thousands of dollars for work and material, were to make a machine that would produce such product, would you say that the last party had or had not exercised inventive genius?

A. I certainly should say that the last party had exercised inventive genius of a high order. If the last party, by study and labor and expenditure, was the inventor when the other man could not produce the machine, certainly, if the first party were looking to the production of a machine

and could not produce it, and the second party produced it, the second party was certainly the inventor.

X Q. 27. Have you ever secured a patent yourself?

A. No, sir.

X Q. 28. Have you ever heretofore testified before a court as an expert in a patent cause?

A. No, sir; I have not.

X Q. 29. You say, in answer to direct question No. 13, that when a person wishes to have a die made he brings in the design, from which you make it. What do you mean by the design?

A. A design is anything that is wanted to be made—generally a drawing is brought; or, if he wanted this [takes up a piece of machinery on the table] made, he would bring it in his hand and say, I want a pattern made the same as this. That would save him from making a drawing. But if he wanted a pattern made of that faucet [takes up a faucet on the table], then he would have to see what was in the inside of that; the outside would not be enough; he would have to give me a drawing of the interior. That would be all.

X Q. 30. You say the number of forms of dies in use by bakers are legion. Please describe or name as many of the different forms of such dies as you can.

A. There are all kinds. There are, possibly, ten or twelve different varieties of common crackers—more than fifty varieties. I am sure that I have made fifty cutters of common crackers of different kinds. There are oyster crackers of every kind; there are all the different fancy kinds of crackers with scalloped edges, and names of all kinds on them, whatever the baker wants. Then, coming to what we call fancy crackers, anything that you can design; for instance, we have got figures of all kinds, letters of all kinds. The menagerie cutter embraces all the animals; the national cutter embraces all the nationalities of

men, the contour of the man, with different ideas connected with the nations, such as the German holding his glass of beer, and an Irishman with his shelalah, etc. When it comes to cakes, there are jumbles of all kinds—that is, these little round cakes with a hole in the center of them; and cutters for snaps and all kinds of gingerbread work. It would take a person with a memory of a giant to remember the form of the cutters that have to be made for cracker machinery, as the fancy of the customer dictates, and the patterns have to be made. To show the nicety of pattern making in bakers' machinery, one baker may want a cutter made for a common cracker one-eighth of an inch less than another baker, owing to the shrinkage of doughs. A may make a dough different from B; the pattern maker will have to make the same die exactly, but perhaps one-sixteenth of an inch smaller in each of the sections. All these changes have reference to the change in the outer contour and impressions upon the face of the product.

X Q. 30. Are you in business for yourself?

A. No, sir; I am employed by John A. McIntosh. His shop is between Washington and Madison Sts., on Jefferson St.

WILLIAM NICHOLS.

CHARLES SAWYER, a witness produced, sworn and examined on the part of the defendants, deposed and testified as follows:

Q. 1. State your name, age, residence and occupation?

A. Charles Sawyer; 88 Seymour Street; 34 years of age; baker.

Q. 2. How long have you been in the baking business?

A. About 20 or 25 years.

Q. 3. Are you familiar with the kind of doughs that are used in bakeries?

A. I have made every grade of goods, excepting bretzels—most everything there is made at the present day.

Q. 4. Did you ever see bretzels made?

A. I have seen them made by hand, but not by machinery.

Q. 5. Do you know the kinds of dough used for making bretzels?

A. The dough is used the same as soda cracker dough; it is made the same as hard cracker or pilot bread dough—either one. You can mix it up either way. A bretzel is made by mixing up flour and water and then a little lard, boil it, then throw it in the salt and then bake it.

Q. 6. Did you ever see crackers, jumbles and other like goods cut out of the dough by dies?

A. Every grade that we make we cut out with dies. They are all cut one way. Every die is made so that it works up and down on the machine. The dough is put in the rollers and it slides down onto a cloth, and it comes under the dies and is chopped out. Every grade that is made is cut out the same way.

Q. 7. These dies cut on the flat surface, do they?

A. Yes, sir.

Q. 8. State how many different forms you have seen cut out of dough with flat dies.

A. I don't think not less than 45 or 50; somewheres about that, maybe more.

Q. 9. State what some of these forms would resemble.

A. It would resemble a soda cracker, oyster cracker, nicknack, animal, jumbles. A jumble cutter is made just similar to a bretzel cutter, only a bretzel cutter is something in the shape of a heart; then there is a little something across it formed just in the shape of a bretzel.

Q. 10. Up to 1879 or 1880, about how many different forms and designs had you seen cut with flat dies?

A. I guess there was very near as many then as what

there is now. There is always a few—there might be a half a dozen new varieties that are out.

Q. 11. State whether or not a flat die, used for cutting crackers, or jumbles, or nicknacks, could be used on bretzel dough to cut that kind of dough.

A. It would be with bretzel dough just the same as it would with any other kind of dough, only, of course, it would not be in the shape of a bretzel.

Q. 12. What I want to know particularly is, whether there are any differences between bretzel dough and other kinds of dough that would prevent a die used for cutting other kinds of doughs from being used in cutting bretzel dough also? Please state the fact about that.

A. I don't think there is, because a bretzel goes through just about the same process as a cracknell biscuit does. This dough is cut out with a die; it is then put into boiling hot water—cracknell dough is—and taken out and baked the same as a bretzel, only a bretzel is boiled in lye water and a cracknell is not.

Q. 13. Then, in your opinion, a die that would cut one kind of dough would also successfully cut another?

A. Yes, sir; it would.

Counsel for complainants objects to the foregoing testimony as inadmissible, incompetent and improperly adduced as rebutting evidence.

Cross Examination by Mr. Edson.

X Q. 14. Have you ever manufactured bretzels?

A. I never did.

X Q. 15. Have you ever made any bretzel dough?

A. I made some bretzel dough by hand, I think, one time, a few years ago—a small batch just to try; that is all that I have ever made that is enough to speak of. But not by machinery; I have never seen it made by machinery. I have seen the bretzel die; it is just the same as any other,

only a little different shape. I guess we have somewheres about 150 dies in our factory.

X Q. 16. You have never seen bretzels made by machinery?

A. No, I never did.

X Q. 17. You have never seen bretzel dough prepared for use on bretzel machinery?

A. No, sir.

X Q. 18. Can you state whether or not bretzel dough, to be worked up into hand made bretzels, is like or unlike dough to be used on a bretzel machine?

A. I could not say as to that; I never saw one of those machines work. I never saw the dough prepared for use on the bretzel machine. There cannot possibly be any dough made but what any other die will cut it. It is all made out of flour and water. Every grade of goods we make is made out of flour and water and sugar.

X Q. 19. Then, I understand you to say that a die made for cutting dough into any one of the innumerable articles of commerce made from flour can always be used upon bretzel dough?

A. Certainly it can be cut upon any other dough—it can be cut just the same. Bretzel dough is cut out just the same as any other kind of cracker.

X Q. 20. How many different kinds of dies for cutting dough are you familiar with?

A. We have here in our factory—that is, here in Chicago—and in the East, about 150 kinds; but I guess we have here now about 45 or 50—maybe more—I could not tell exactly. I think we have somewheres about 75.

X Q. 21. Will you please state how bretzel dough is made?

A. Flour, first, is taken and dumped into a trough; then there is a very little lard put in and the water is put in, and it is mixed up into a stiff dough, and, by what I understand,

it is taken and rolled down smooth for the bretzel machine for Roth & McMahon, and then it is put into the machine and chopped out and put into a kettle of lye water and boil them; then they are taken out and thrown into salt—right on the top of the salt; then, some lay them on pans and some bake them right on the bottom of the oven. Then, again, they take dough—have a piece of sour dough—and mix this sour dough into this water and lard—a little lard; no salt, only what goes on top after they are boiled; and that is mixed up and goes through the same process, only for the machine it is rolled out into sheets and run through the machinery. A hand made one is rolled out into little strips on a bench with the hand and then cut off into proper lengths for bretzels, the ends doubled over into proper form. The only difference in making machine ones and hand ones is, the machine ones are run through in sheets of dough, and the hand made ones are cut off into strings. It is all just the same dough.

X Q. 22. What is your occupation, Mr. Sawyer?

A. Foreman for F. A. Kennedy.

X Q. 23. What goods do you manufacture?

A. We manufacture nothing but crackers and all kinds of biscuits.

X Q. 24. Do you know anything about the bretzel trade in this section?

A. Yes, sir; we handle a great many of them; we have sold as high as 50 boxes a week. We buy some in Chicago and some in New York.

X Q. 25. Of whom do you purchase these bretzels?

A. I could not say what companies they are that we got them from. We got some of them from somewhere on Ogden Avenue.

X Q. 26. Machine made or hand made, or both?

A. We use none but machine made; they are machine made.

X Q. 27. How long have you been selling bretzels?

A. We have been selling them now going on three years here.

X Q. 28. How does the bretzel trade compare now with what it was three years ago in volume?

A. I don't know. I don't think there are as many sold; there might be more sold, but we do not handle so many of them as we used to—as we did two years ago.

X Q. 29. How do you account for this falling off in the trade?

A. I think there are more that are going into it.

X Q. 30. And you do not make a specialty of bretzels?

A. No, sir.

X Q. 31. Are you not somewhat familiar with the extent of the bretzel trade in this section, outside of your own establishment?

A. I could not say how many there are. There is a very large trade of them all through our western states.

X Q. 32. That trade is constantly increasing, is it not?

A. It must be, but then it is cut up.

X Q. 33. I suppose if there are fifty people selling bretzels now, where there was one formerly, the trade would be reduced for each person?

A. Yes, sir.

X Q. 34. Can you account for this extraordinary increase in the bretzel trade during the last year or two?

A. Because, I suppose they are made by machinery and they come cheaper. You can buy them cheaper than what you could when they were made by hand. They are manufactured cheaper.

X Q. 35. How do your machine made bretzels compare in quality with the hand made, if the same material is used?

A. The only difference in machine made is in a little better and more uniform shape.

X Q. 36. The flavor is as good?

A. The flavor and everything is just the same.

X Q. 37. How much cheaper are the machine made than the hand made bretzels?

A. I could not say. Three barrels of flour can be manufactured now just as cheap as one could by hand.

X Q. 38. How many *new* dies have been brought to your notice in the bakery business during the last two or three years. You have said there are 150 in use and 75 in your establishment, etc. I want to get an idea of how rapidly these dies are brought out—how many per week or month?

A. They come out three or four a year, perhaps. Well, I guess I have seen all of that for the last four years—three or four a year.

X Q. 39. New shaped dies?

A. Yes, sir.

X Q. 40. When did you first see the bretzel die?

A. A year ago; the first I saw was in Roth & McMahon's shop. It might have been more than a year ago; I cannot tell exactly.

X Q. 41. I understood you to state that bretzel dough is exactly like cracker dough. Is that correct?

A. Yes; it is mixed the same as any cracker dough is. It is mixed up the same as soda cracker or pilot bread (as we call the old fashioned ship bread) dough—mixed either way. You can sponge it and mix it up with cold water.

X Q. 42. What products are made from cracker dough?

A. Sometimes we make half a dozen kinds of crackers out of one kind of dough.

X Q. 43. Do you make anything large, like a biscuit, from it?

A. That is made from bread dough. That is taken with a piece of bread dough and a little sugar put into it, and then it is baked. That is not a craker; that is a bun, or a biscuit you might call it.

X Q. 44. State how cracker dough is made.

A. Pilot bread dough, or cracker dough, is made by dumping flour into the trough; so much water goes in, say, a barrel of flour, so many buckets of water and so much salt. It is mixed up and it runs right through the machine right into the oven, cut out of the dough. And a sponge cracker—the flour is dumped into the trough and so much yeast taken to a barrel of flour, and this dough rises, sets there about twelve hours, and then it is taken—lard shortening is put in, and the salt—then mixed up into a stiff dough, then it is proved again; it sours, and soda is put in to sweeten it up, then it is run through the machine and cut into proper or desired shape, and then into the oven and baked.

X Q. 45. Do you know of any dough that is prepared by mixing flour, water and yeast, and is then immediately cut by a die preparatory to baking the product?

A. Yes, sir; ship bread—pilot bread. It is mixed right up and immediately run through the die and run into the oven. It don't have to stand to raise any.

X Q. 46. When does it rise?

A. It don't rise any, only when it rises in the oven while it is baked.

X Q. 47. Is ship bread cut by hand or by machinery?

A. By machinery. I guess that has been in existence as long as the bretzel has.

X Q. 48. From your observation, what can you say about machine made bretzels displacing the hand made bretzels in the market?

A. There are more manufactured now, since they have been made by machine, than while they were made by hand. It is the machine trade that has increased the sale of them.

CHARLES SAWYER.

GEORGE B. DURKEE, a witness produced, sworn and examined on the part of the defendants, deposed and testified as follows:

Q. 1. State your name, residence and occupation.

A. George B. Durkee; residence, 439 W. Harrison street; machinist.

Q. 2. What special line of machinery have you been engaged in working with?

A. We design special machinery for all purposes.

Q. 3. What is the name of your firm?

A. Durkee & Keffer.

Q. 4. What do you mean by designing machinery?

A. Any new thing that comes out, and parties want machinery to manufacture it, we design and construct such machinery—in fact, we assign our invention to the parties who may come to us, wherever it requires invention.

Q. 5. Did you ever design machinery for use in the bakery business?

A. I do not remember that we ever have, now.

Q. 6. Whenever any particular article or product is brought to you, and you are desired to make a die or cutter to make such article, how do you proceed?

Objected to as incompetent.

A. We are guided entirely by the article or product; the article itself would be entirely the guiding feature in the matter. Now, for instance, we just made a machine for cutting and expanding metal, which cuts from a flat sheet of steel and spreads the metal in such way that it is diamond shape, taking the place of woven wire without losing any metal—no loss. The man had invented the article, but did not know how to make it.

Q. 7. You mention that as an instance of yuor line of business and your experience?

A. Yes, sir; we make anything that comes along.

Q. 8. If I should bring you a particular cracker, or

jumble, or anything of that nature, and ask you to make a cutter to cut it, how would you proceed?

A. Anything of that kind—a thing as simple as that—I should give it to my foreman, or any one of a half dozen of my men. I should not consider it anything that called for any special attention from me.

Q. 9. Did you ever see what is known as a bretzel?

A. Yes, sir.

Q. 10. You know, then, what they are?

A. Yes, sir.

Q. 11. If a bretzel were brought to you, and you were given an order to make a die or cutter to cut it out by machinery, how would you proceed?

A. A bretzel, as I understand it, is a piece of dough twisted up, made by hand—the genuine bretzel. Now, if I were called upon to imitate a bretzel from flat rolled dough, I should make the cutters in such a way as to imitate that, allowing one portion of the bretzel to cross the other, in the same manner that we would make a monogram. Now, we make a good many monograms; we make them from flat pieces of wood. We take a flat piece of wood, and we make one letter so it stands out more prominent, and another one appears to be behind it, especially where they cross each other. As I understand it, in this bretzel one portion crosses the other—is laid over the other. In drawings we represent such things almost every time we make a drawing. This piece here [makes a little sketch], going around here, and passing under this piece here, would be represented like that. Anybody would see that one piece lies over the other. We do it in drawings, and even in monograms, and everything of that kind.

Objected to as irrelevant.

Q. 12. That is, follow the pattern, whether it be a bret-

zel or any other article, and if one part laps over the other, you include that feature in the die or cutter?

A. Yes, sir.

Q. 13. State whether or not, from your experience in the business of designing different kinds of machinery and for making dies and cutters, any invention would be required in making a flat die, or a die to cut on a flat surface, so as to cut out of dough the form and appearance of a bretzel, being old and furnished to you as a pattern.

Objected to, *first*, as not rebutting evidence; *second*, that the witness is wholly incompetent to answer the question, not being introduced as an expert, and not having proven himself such.

A. I consider it a mere matter of imitation.

Q. 14. And not invention?

A. No invention whatever; there certainly is none.

Counsel for complainants objects to the foregoing testimony as inadmissible, incompetent and improperly adduced as rebutting evidence.

Cross Examination by Mr. Edson.

X Q. 15. Have you ever seen a bretzel machine at work?

A. Yes, sir.

X Q. 16. When and where?

A. I saw one at work yesterday in Roth & McMahon's factory.

X Q. 17. Is that the first time?

A. Yes, sir.

X Q. 18. What kind of a machine was it?

A. It was a machine for cutting out any form—that is, they put in different forms.

X Q. 19. Did you see a bretzel cut on it?

A. Yes, sir.

X Q. 20. What was the occasion of your visit to their establishment yesterday?

A. They wanted to show me how the machine worked. I had never seen any of their machinery. I am in the same building, but had never seen their machinery working before.

X Q. 21. Did you not call there to examine that machine with a view to your testifying to-day?

A. I did not know that I was going to testify. They told me that they had some kind of suit about the bretzel machinery and wanted me to look at it. After I had looked at it and given them my opinion they asked me to come over here and testify.

X Q. 22. Did you know whether they were complainants or defendants?

A. I did not know which they were. No, sir.

X Q. 23. Did they not state that they had been sued, or that they represented the defendant in the suit?

A. Not that very way. Mr. Roth said that a man had sued them. I don't know who it was.

X Q. 24. When did you advise him as to the purport of what your testimony would be?

A. I didn't know that I was going to testify. They asked me if I considered that any invention, and I said I did not, and neither do I.

X Q. 25. Did you ever make a bretzel die?

A. No, sir; never did. I would not consider it any trick to do so.

X Q. 26. You think a bretzel die, then, could be made by any skillful mechanic?

A. Why, you hand a bretzel to any machinist and tell him to make a die like that, and he would make it, and that is all there is of it.

X Q. 27. That is, in your opinion, he would be able to make it?

A. I am satisfied that I have certainly three or four men in my shop that could make that die. If I handed

them a bretzel they could make it so near that it would be called a bretzel. Dough is very soft stuff and if you make a die that comes down and fits that bretzel that is all there is to it.

X Q. 28. How long would it take you to make a practical working bretzel die, after being furnished with the bretzel as a specimen?

A. That would be a matter of how long it would take a man to cut out a piece of steel. The bretzel gives him the form. I should judge that die was worth ten or twelve dollars—a couple of days' work. A nice thing to make. Of course this die has to be made and cut smooth and all that; that is simply a matter of polish. The form is furnished by the bretzel. No invention. If a man gives you any form there is no invention; we simply go by that form. The invention is really in the bretzel itself; it is given you just simply to imitate, that is all.

X Q. 29. You never failed to make any piece of machinery that you were called upon to construct?

A. No, sir; I don't think I ever did—yes, but I never failed but once.

X Q. 30. Do you know J. W. Ruger & Co., of Buffalo, N. Y.?

A. No, I do not know them personally. I know them by reputation.

X Q. 31. Do you know Fowler & Rockwell, of New York city?

A. No, I do not.

X Q. 32. What is the standing of Mr. Ruger in the trade as a machinist?

A. I do not know that. I think I saw a machine of their make somewhere. I don't know that I ever heard anything about them.

X Q. 33. You don't know them to be one of the oldest

firms in the country for making cracker and other dies for bakers' use?

A. No, sir; I do not.

X Q. 34. How long have you been in business as a machinist for yourself?

A. For myself, about ten years.

X Q. 35. Do you have business transactions with Roth & McMahon?

A. No, sir; nothing more than we occupy part of their building, that is all. We have done some work for them; they have never done anything for us that I know of.

X Q. 36. You are sub-tenants of theirs?

A. Yes, sir.

X Q. 37. What form of dies have you made in your shop?

A. We have made dies for cutting out metal mostly, except that we made lots of dies for these Parker presses for cutting out various forms of metal, such as links for chains. The most that we have done outside of metal dies has been for cutting out boot soles and leather in various forms. We have also made dies for forming soft material made from soda—a composition—made them of mahogany and any kind of wood.

X Q. 38. Have you ever made any dies for bakers' use?

A. No, sir; I have not.

X Q. 39. Do you know anything about the composition of dough and the method of preparing it for the various articles of trade manufactured by bakers?

A. I have an idea that I know something about dough. I never had any experience in it, but I do not think that the men even in the bakery know anything about the texture of the dough. For these different articles they mix it, in my opinion, to a suitable consistency for their purpose, and that consistency would probably be about the same for different articles, but they might make it of a different rich-

ness, so far as the difference in materials was concerned; but the consistency for the machine and for the hand made —the mechanical part of it—in my opinion would not vary much. A bretzel machine would cut a cracker just as well. A bretzel cutter would cut cracker dough, I should think. I have no knowledge of that.

X Q. 40. Suppose a machinist, whose principal business for 25 years had been to construct dies especially and exclusively designed for use by bakers, had worked for a couple of years and expended nine or ten thousand dollars in order to form a die which would make a certain product, and had failed to do so, and another party were to subsequently make a practical working die for such product; would you say that that was an exercise of genius by the latter party that might be termed invention, or not?

A. I should consider the first party very near a blockhead if he should spend that amount of money on a bretzel die. I'm not afraid to have that go on record. Just hand me a common bretzel and I will take the job of making it for twelve dollars.

X Q. 41. Do you mean to be understood as holding that if, before the introduction of bretzel machinery within the last two or three years, you had been furnished with a bretzel and asked to construct a machine that would make that article, that you could do so within a few hours' time and with a few dollars of expense, and could make a machine that would cut—make a practical working bretzel machine—and that it would not require the exercise of inventive skill?

A. No; I do not claim that I could in a few hours' time make a machine. I am talking about the die. What I have said has been simply about the die for cutting. The machine might bring in quite a complicated invention.

X Q. 42. You do not mean to be understood, then, as holding that the construction of the die, and properly

mounting it so that it might be operated to cut a bretzel, would not require invention?

A. The machine getting the dough in place and out of the way in time, of course involves invention. I suppose that part of the invention is already in use in all kinds of bakers' machinery and cracker machinery, and such machinery for cutting; that probably has been invented and improved upon by different parties. The die was particularly what I was talking about.

MR. EDSON:—The witness is reminded that he should answer the questions specifically and not give an argumentative answer, and that the argument should be left to the defendants' counsel.

X Q. 43. I now ask you again to state whether, in your opinion, the construction and adaptation of a die and the proper mounting of it, so that it will make an operative machine, would not require invention, in view of the state of the art prior to the introduction of bretzel machinery?

A. I should not consider that an invention, in view of the fact that all cutters are mounted and worked in the same manner, one as the other; that is a settled affair. There is no new invention—not a particle.

X Q. 44. What is the part that you said might be a very complicated invention?

A. The dough moves along on aprons, and is reduced from a heap or roll to a sheet; this is done automatically by the machine, which gets the dough in place to be cut and gets it away in time after each cutting. All the machine works; all the parts have to be properly timed. I consider that part an invention, which probably is not very new.

X Q. 45. What do you mean by the latter portion of your answer, in which you say, "which is not very new?"

A. You asked me about the machine; there is an apron —a canvas—which is moved by machinery, and I say that

the machine is timed in such a way that the dough moves a certain distance when the dies come down, so that the dies do not cut down in the dough which has been previously cut, thus enabling them to cut in a new place. They would be cutting themselves all up unless they cut in a new part of the dough. The entire machine, except the die, I presume has involved the inventions of a number of men, perhaps, and has been improved upon from time to time. I have seen such machines for a number of years, in bakeries.

X Q. 46. When I inform you that half a dozen skillful mechanics and engineers worked for 12 years and expended between fifty and sixty thousand dollars in experimenting, before a practical working bretzel machine was obtained, I presume, in view of your criticism upon the parties before referred to in this testimony as having expended upwards of nine thousand dollars, that you would also call them all blockheads?

A. No, sir; I made that remark in reference to the die simply.

X Q. 47. Describe such a die as you refer to.

A. I referred to a die for cutting bretzels.

X Q. 48. How is it made? Describe it.

A. It just simply includes the die to be placed in the moving block which is moved down by the machine itself.

X Q. 49. You mean, I suppose, the groove which is made to conform to the shape of the die?

A. The die would conform to the bretzel and be placed in this moving block—the die block, whatever you call it—that is moved by the machinery. You can place one or a dozen in, if the machine is large enough.

X Q. 50. Have you ever taken out a patent yourself?

A. Yes, sir.

X Q. 51. What was it for?

A. I have taken out a patent on a steam engine, a mor-

tising machine, and a chain out of wire—taking wire in at one end and making the chain come out at the other. I take out a patent for my own inventions about every month.

GEORGE B. DURKEE.

HENRY CALLAHAN, a witness produced, sworn and examined on the part of the defendants, deposed and testified as follows:

Q. 1. State your name, residence and occupation.

A. Henry Callahan; 218 West Washington street; baker.

Q. 2. Where are you employed?

A. At the Dake Bakery, Chicago.

Q. 3. How long have you been employed there?

A. I have been in the employ of the Dake Bakery, for the present employers, about thirteen years, and with the original Dake about four years.

Q. 4. What is your position at the Dake Bakery?

A. Foreman.

Q. 5. How many years have you been engaged in the baker business?

A. I have been in the baker business for about 30 years.

Q. 6. Do you know what a bretzel is?

A. I do, sir.

Q. 7. Did you ever make any?

A. Yes, sir.

Q. 8. How many years' experience have you had in making bretzels?

A. Well, I have been making them off and on for 25 years; not to such an extent as they are made now.

Q. 9. Did you ever see a machine made bretzel?

A. I have seen a cracker machine cut bretzels.

Q. 10. What kind of dough is used to make bretzels?

A. Any ordinary dough. The quality of the bretzel is made by the stock that is used; what I mean by that is, if

more shortening is used it makes it richer—it makes the quality of the bretzel better.

Q. 11. State whether bretzel dough is so different from other kinds of dough or not that it requires any special kind of machinery to cut it.

A. It does not, sir.

Q. 12. State whether or not you have ever seen bretzel dough cut on any other kinds of machinery.

A. I have seen it cut on a cracker machine.

Q. 13. State how the dies or cutters for cutting crackers operate when used in cutting bretzel dough.

A. They operate the same as any other cracker that clears off the die. It don't make any difference what shape it should be in.

Q. 14. State whether or not cracker cutters will cut bretzel dough as successfully as other kinds of cracker dough.

A. It certainly will, sir.

Q. 15. State about how many kinds or shapes, or crackers, jumbles, etc., you cut at the Dake Bakery.

A. I suppose we cut a variety of them, something like a hundred kinds—all of the same piece of dough, except sweet goods. It will make any shape of dough required, whether it is a bretzel, oyster cracker, or any kind of cracker.

Q. 16. These hundred or so of different kinds of dies are to cut different forms and configurations, are they?

A. Yes, sir.

Q. 17. About how many forms for cutters or dies cutting on a flat surface did you use, say, in the years 1878 or '79 or '80?

A. There were probably 60 kinds.

Q. 18. Sixty different shapes?

A. Yes, sir; at that time.

Counsel for complainants objects to the foregoing testi-

mony as inadmissible, incompetent and improperly adduced as rebutting evidence.

Cross Examination by Mr. Edson.

X Q. 19. Have you ever manufactured bretzels?

A. Yes, sir.

X Q. 20. What kind?

A. Hand made.

X Q. 21. Ever make any machine made bretzels?

A. No, sir.

X Q. 22. Did you ever prepare any dough to be worked on a bretzel machine?

A. I have, sir.

X Q. 23. When?

A. Some two years ago I prepared some for Roth & McMahon; they were trying their cutter.

X Q. 24. Have you ever prepared any since?

A. No, sir.

X Q. 25. For a machine?

A. No, sir; I have not made any.

X Q. 26. When did you try bretzel dough on a cracker machine?

A. I never tried dough on a cracker machine.

X Q. 27. Do you manufacture bretzels now?

A. No, sir.

X Q. 28. Or sell them?

A. We sell them; yes, sir.

X Q. 29. In what quantities?

A. I don't know, really; we sell them in some large quantities.

X Q. 30. From whom do you purchase them?

A. I believe from a man by the name of Schwartz, upon Ogden Ave.

X Q. 31. Machine made or hand made?

A. Hand made, sir.

X Q. 32. What effect is the introduction of the machine made bretzels having upon the bretzel trade?

A. That I don't know, sir.

X Q. 33. Have you ever dealt in machine made bretzels at your own establishment?

A. I really could not say, sir. I am not posted in the business. I do not know what they buy and sell there.

X Q. 34. You do not know whether they buy and sell machine made bretzels or not?

A. No, sir.

X Q. 35. For all you know, they may have orders for large quantities of them?

A. I don't know about that.

X Q. 36. Your position is in the shop, not in the office?

A. My position is foreman. My duties are to manufacture.

X Q. 37. In your line of business is the dough generally cut immediately after it is mixed?

A. What kind of dough have you reference to?

X Q. 38. I do not know anything about it; I am asking you.

A. Some kind of doughs we mix over night; some kind of doughs we mix and work it right off.

X Q. 39. What do you mean by working it right off?

A. Just as quick as it is mixed, go right to work and make it.

X Q. 40. What are the kinds that you make immediately after mixing?

A. Jumbles, and most all kinds of sweet goods.

X Q. 41. What, if any other kinds, besides sweet dough?

A. Pilot bread—hard bread.

X Q. 42. Ship bread?

A. Yes, sir.

X Q. 43. Does that have any yeast in it?

A. No, sir.

X Q. 44. How soon after mixing, does dough, having yeast, begin to expand?

A. Begin to work, do you mean?

X Q. 45. Whatever you call it.

A. It depends upon the temperature of the weather a good deal; if the temperature is pretty high it will come pretty quick; you can bring it along in a few hours.

X Q. 46. How soon does it begin to expand?

A. We do not call it started until it is in the sponge about an hour and a half.

X Q. 47. If dough, having yeast and ready to be cut, is left without being cut, how soon will it begin to rise?

A. That depends upon the kinds of goods you are going to bake out of that dough; I cannot state to a minute. It is supposed to be fermenting right off, but you cannot perceive it.

X Q. 48. Of the 75 different shaped dies that you have, can each be used on all kinds of dough?

A. No, sir.

X Q. 49. The dies, then, have to be made with reference to the particular kind of dough for which they are to be used?

A. For any kind of hard dough. Soft cake dough it will not.

X Q. 50. How are dies prevented from sticking to the dough?

A. We have got what we call a clearer—that is, after the dough is cut out there is a clearer which shuts off this dough.

X Q. 51. After the dough is rolled and before the dies cut upon it, is it not first floured to prevent the dies from sticking?

A. Not always, sir.

X Q. 52. What dies do not require this flouring?

A. Any kind of hard dough. What I mean by hard dough is dough like pilot dough, or other crackers, or corn meal dough.

Re-Direct Examination by Mr. Banning.

R-d. Q. 53. How many general classes of dough are there? You have spoken of soft dough and hard dough.

A. Well, there are two kinds—soft dough and hard dough.

R-d. Q. 54. Take a die that will cut hard dough of one kind and state whether or not it will cut other hard doughs.

A. Yes, sir; it will cut any hard dough.

R-d. Q. 55. When you say, therefore, that all these 75 dies will not cut all kinds of dough, what do you mean?

A. I mean that there are some that are adapted to cutting soft dough.

R-d. Q. 56. What kind of dough is bretzel dough—soft dough or hard dough?

A. It is a hard dough, sir.

R-d. Q. 57. Do you mean, then, to say that any kind of a die that will cut a hard dough will cut a bretzel dough?

A. Yes, sir.

Re-Cross Examination by Mr. Edson.

R. X Q. 58. Did you ever cut bretzel dough on any other occasion on a bretzel machine than the one referred to in the cross examination?

A. No, sir.

R. X Q. 59. You are not able to state from experience whether dough made in large quantities, to be worked on a bretzel machine, would be harder or softer than the so-called hard dough, with which you are familiar?

A. In my experience, the doughs will be the same. My experience is that both would be the same.

R. X Q. 60. And your experience is limited to the sin-

gle time when you tried a dough upon a small hand cutter in the shop of Roth & McMahon?

A. Not a hand cutter, but on a cracker machine.

R. X Q. 61. As an experiment?

A. Yes, sir.

HENRY CALLAHAN.

JACOB ROTH, a witness recalled on the part of the defendants, deposed and testified as follows:

Q. 1. You have already given your testimony in this case, I believe?

A. I have.

Q. 2. State whether or not you have ever seen different kinds of hard dough cut on different kinds of dies.

A. I have.

Q. 3. State what your experience has taught you in reference to whether a die for cutting one kind of hard dough will cut other kinds of hard dough equally as well.

A. A die made in the form of a cutter for cutting crackers will cut any kind of hard dough, no matter what shape it is in.

Q. 4. That is, no matter what shape the die may be changed into?

A. Yes, sir. In trying cutters in our factory, we send over to a bakery and buy five or ten pounds of dough; we do not state what kind of dough it should be, except hard dough, and we try with that dough any shaped die that we have made before we ship it. We run the same dough on bretzel cutters.

Q. 5. State whether or not, in thus testing different kinds of hard doughs on a variety of different shaped cutters, you found any difference as to the manner in which the various shaped cutters would cut the dough.

A. I have found no difference in hard doughs. The

working of the cutters is all the same; they work equally as well with dough from one bakery and from another.

Q. 6. State whether or not a die for cutting bretzels will cut any kind of hard dough equally as well.

A. It will cut any kind of hard dough equally as well.

Q. 7. And whether or not dies for cutting other kinds of hard dough equally as well?

A. That I do not know, as I do not know that there is any difference in bretzel dough.

Counsel for complainants objects to the foregoing testimony as inadmissible, incompetent and improperly adduced as rebutting evidence.

Cross Examination by Mr. Edson.

X Q. 8. There may be bretzel dough, then, that is much harder than the bretzel dough with which you are familiar?

A. I do not know that there is any difference in the bretzel dough; I just said that. I do not know that there is any difference in hard dough from bretzel dough. I never understood that there was any difference in it.

X Q. 9. You have not examined bretzel dough in different establishments, have you?

A. I have examined bretzel dough in Philadelphia, and what I know of dough I should judge it to be about the same as hard dough for crackers.

X Q. 10. You are not an expert on dough, I suppose?

A. No, sir.

X Q. 11. Have you ever witnessed the preparation of dough for use on a bretzel machine?

A. No, sir.

JACOB ROTH.

Adjourned until 10 o'clock, a. m., Wednesday, October, 15, 1884. Wednesday, Oct. 15, 1884, met pursuant to adjournment; present as before.

JOHN MCMAHON, a witness recalled on the part of the defendants, deposed and testified as follows:

Q. 1. You have been examined in this case as a witness before, I believe?

A. Yes, sir.

Q. 2. State whether you know what bretzel dough is, or whether you have ever seen it.

Objected to as calling for expert testimony, for which no foundation has been laid.

A. I have seen it.

Q. 3. State whether you have ever seen other kinds of hard dough for making crackers and other products, or know what it is.

A. I have.

Q. 4. State whether you have ever seen various kinds of hard dough cut by bretzel dies.

A. I have seen nearly all kinds of doughs cut with bretzel dies, and have also seen bretzel dough cut with other dies.

Q. 5. State whether or not you have ever noticed any difference in the way these various dies cut the various kinds of hard dough.

A. I never noticed any difference.

Q. 6. Where have you seen bretzel and other dies cutting bretzel and other kinds of hard dough?

A. Well, I have seen them cut them in our own factory and in bakeries.

Q. 7. State about how often you have seen that done.

A. Well, on cracker dough I could not say how often I have seen it; I have seen it very often—probably hundreds of times. On bretzel dough I have not seen it very often. I have seen the bretzel only working in our own factory.

Q. 8. From your knowledge of dies for cutting crackers, dies for cutting bretzels on a flat surface, and from what

you seen done, please state whether or not there is any difference between bretzel dough and other kinds of hard doughs, which requires any special difference in the kind of dies by which they are to be cut,

A. I do not believe there is a particle of difference; I never found any in trying them.

Q. 9. When your firm receives an order to make a die to cut any particular form or old product, and such old product is furnished to you, state how you proceed to make a die to cut it.

A. Well, we just make a sketch, give it to our pattern maker and tell him to make it.

Q. 10. About how many different forms of dies or cutters for cutting on a flat surface have you made during the last few years at your factory, for cutting dough in bakeries?

A. I don't know how many, but I presume we have made hundreds--different sizes and different shapes.

Q. 11. And do you always proceed in the way that you have described?

A. Yes, sir; in all cases.

Q. 12. Where an old product is furnished to you, and an order to make a die to cut it out of dough on a flat surface, state whether or not, in your opinion, any invention or anything more than mechanical skill is required to make such die.

A. I do not consider that there is any invention at all about it. We have never considered it such.

Q. 13. How about making a die to cut a bretzel out of dough on a flat surface?

A. I do not consider there is any more invention about it than there is about making a die to cut any other shape.

Counsel for complainants objects to the foregoing testimony as inadmissible, incompetent and improperly adduced as rebutting evidence.

Cross Examination by Mr. Edson.

X Q. 14. When did you first make a die for cutting bretzels?

A. I do not remember the date; I know that the first die made for bretzels was made before the issue of this Butler, Earhart & Crawford patent.

X Q. 15. When did you first see a bretzel machine?

A. The one that we made was the first that I ever saw.

X Q. 16. Before the date of the machine that you made for the defendants?

A. The one we made for defendant was the first we made.

X Q. 17. You had never seen a bretzel machine?

A. I never had seen a bretzel machine.

X Q. 18. Or a die in the form of a bretzel?

A. No, sir.

X Q. 19. On a cylindrical or flat surface?

A. Not on either.

X Q. 20. Had you ever heard of there being a bretzel machine in practical use?

A. I had heard of the cylinder machine.

X Q. 21. Before the date that you made that cutter?

A. Yes, sir.

X Q. 22. Had you ever had it described to you?

A. I don't remember whether I did or not.

X Q. 23. Had your partner seen a cylinder machine?

A. I don't know whether he had ever seen one before that date or not.

X Q. 24. Were you aware that bretzel cylinder machines were in use before that date?

A. Yes, sir.

X Q. 25. Had you seen either of the patents that had been issued to Lampert and Huber?

A. No; I had not.

X Q. 26. Do you not know, as a matter of fact, that

your partner came to Columbus and went to their place of business and carefully examined the cylinder machine long before you made that?

A. No; I do not.

X Q. 27. Do you pretend to say that he did not do that?

A. I do not know whether he did or not.

X Q. 28. How many cutters like the one you made for the defendants have you constructed?

A. I don't remember.

X Q. 29. About how many?

A. We made probably three or four; I would not be positive about that; we might not have made so many. I am away from the factory a good deal.

X Q. 30. When was the last one made?

A. I don't remember that.

X Q. 31. About how long ago?

A. I don't remember.

X Q. 32. Have you ever received any applications?

A. We have had very few.

X Q. 33. Within what length of time?

A. We have not had any applications in some time, but I don't know how long ago it is since we had an application.

X Q. 34. Three months?

A. I do not believe we have had any applications in three months.

X Q. 35. Might you not have had one within a month?

A. I do not think it possible, for I have been here most of that time.

X Q. 36. Occasionally you receive one?

A. We have had very few applications.

X Q. 37. Do you often have inquiries as to your machines?

A. We have had parties write us and ask us about its working.

X Q. 38. As to price?

A. Yes, sir.

X Q. 39. What would be your reply?

A. We would give them our opinion about the price and what we thought of it.

X Q. 40. Did you decline to furnish a cutter and give any reason for so doing?

A. Oh, no; we furnish all we can sell. We furnish anybody with a cutter that we can sell it to.

X Q. 41. Do you express any opinion as to its utility?

A. We generally send them a sample of the goods and let them be their own judge whether it is what they want or not.

X Q. 42. What was the occasion on which you made bretzels in your shop on a bretzel machine, referred to in your direct examination?

A. In trying the cutter.

X Q. 43. The cutter that you had made?

A. Yes, sir.

X Q. 44. Do you know William Nichol?

A. Yes, sir.

X Q. 45. How long have you known him?

A. I think it was in '77 I knew him first.

X Q. 46. Where did you make his acquaintance?

A. Made it in our own works.

X Q. 47. Was he in your employ?

A. He was at that time.

X Q. 48. How long was he in your employ?

A. I don't remember now how long.

X Q. 49. Give an estimate.

A. I could not give any idea of it. I know that he was in our employ, and I know that he is not now.

X Q. 50. A year, or five years?

A. I know it is over a year, and I don't believe it is five years.

X Q. 51. What is his business?

A. He is a pattern maker.

X Q. 52. Have you had any business relations with him or his employer?

A. Not with Mr. Nichol. I don't know who his employer is.

X Q. 53. Do you know, either personally or by reputation, the firm of J. W. Ruger & Co., of Buffalo?

A. I know J. W. Ruger personally.

X Q. 54. What is his standing and reputation in the trade as an engineer and machinist?

A. I do not know anything about his standing. I know he has been in the business some time.

X Q. 55. How long?

A. I don't know how long.

X Q. 56. What would you say of the firm, if you were called upon by a friend to express an opinion as to their skillfullness and their responsibility in anything they might undertake, as manufacturers of cutters and dies—especially of cutters and dies for bakers' use?

A. I don't know as I could express an opinion in that respect—as I could give one that would be of any account.

X Q. 57. Do they not stand high, and are they not one of the foremost firms in that line of business in this country?

A. I do not think so. I think that we are about the foremost firm in that line of business.

X Q. 58. You think that they do not do the business that you do?

A. I do not think they do near the business.

X Q. 59. Were you or your partner—either of you—in their employ before establishing yourselves in business in Chicago?

A. My partner was in their employ—that is, he says he was, and I have every reason to believe he was. I never was.

X Q. 60. Are you on good terms personally with Mr. Ruger?

A. On the very best of terms, as far as I am concerned.

X Q. 61. How is it as to your partner?

A. He is on good terms. We feel very good towards Mr. Ruger—probably better than he does towards us; that is my opinion.

X Q. 62. I suppose, from your declining to speak decisively as to their standing in the trade, that there may be some rivalry?

A. I could not tell; I have not examined their books. I know, as to their machines, that many of them have been taken out and ours put in place of them.

X Q. 63. What machines?

A. Cracker machines.

X Q. 64. For whom?

A. D. F. Bremner, of this city; Johnson, Milwaukee, Wisconsin; J. B. Ruger, Lafayette, Indiana; Doser Wild Cracker Co., St. Louis; H. F. Lillibridge, of Minneapolis, Minnesota; Blake, Shaw & Co., of Chicago; W. H. Aldrich, of Chicago.

MR. EDSON: The witness is reminded that the question calls for machines that were thrown out because they were inoperative and useless, not because, by ordinary use and wear and tear, they were in need of repairs.

WITNESS: That is what I mean. They changed them because our machine was much better and satisfactory. I would name, also, Woodward & Stone, Watertown, Wisconsin; ——— Hair, Burlington, Iowa. It is so hard to remember those things. There are a great many more that I cannot name, because I cannot remember them without my books. If you wish for any more, I will get a list of them and bring them over.

X Q. 65. Can you not name any parties east of Chicago?

A. Yes; I can name Lewis & Syker, of Detroit. On cake and cracker machines I can name Camp, of Philadelphia—I think W. E. Camp; David Carrick & Co., of Phil-

adelphia; Stolzenbach, Zainesville, Ohio; George W. Heathman, of Dayton, Ohio; Corle Cracker Co., of Kansas City; T. S. Lewis, Atlanta, Georgia.

X Q. 66. You swear, Mr. McMahon, do you, that each and every one of the parties named by you bought new machines from Ruger & Company, and that immediately thereafter such machines proved to be inoperative and useless, and that you supplied new machines in their stead?

A. No; the machines had been in use some time. They had used them and found that they were not satisfactory. There are some that had been taken out right off—had been taken out in a month or so—two or three months' time—probably in three to four months. Some of them had been used some time, but the machine was not worn out; perhaps it needed a little repairs, but it could be fixed up with very little expense, and could be fixed up almost like new.

X Q. 67. Name the parties for whom you took out new machines, on the ground that they were useless and inoperative, and supplied new ones, in three or four months' time.

A. I would name W. H. Aldrich as one party, of this city; T. S. Lewis, Atlanta, Georgia, as another one; Corle Cracker Co., another. It is pretty hard to remember those things.

X Q. 68. Just state whether you can remember.

A. No; I cannot remember any more that has been taken out inside of that time.

X Q. 69. Did you swap your machines for those purchased by the parties just named?

A. I believe in one case—in the Corle Cracker Company—we allowed them a certain amount—I think we allowed $100—for the machine which they had paid $550 for. I am not positive about it; to the best of my opinion, they paid $550 to Mr. Ruger.

X Q. 70. What kind of a machine was that?

A. That was a cake machine.

X Q. 71. When was this sale made?

A. It was a few years ago; I could not state exact date; I should judge it was probably somewhere from two to five years, or three to five years.

X Q. 72. Do you not think Mr. Ruger could name an equal number of persons for whom he has exchanged his machines for yours?

A. I don't believe he could name one party.

X Q. 73. As I understand you, these were all cracker and cake machines?

A. Cracker and cake machines.

X Q. 74. In all cases, except the two which you have excepted, the machinery had been well worn and was in need of repairs?

A. I don't know that; I don't remember the facts. They threw the machines out, and they were using the machine right along. One of those machines will last a good many years by making a few repairs on it; will last I don't know how long.

X Q. 75. Only in two instances did you take the old machines in part payment or exchange?

A. That is, these three or four machines that I have named, that were taken out within three or four months from the time they had been put in by Ruger.

X Q. 76. Generally, did you not take the old machine in part payment?

A. We have taken some. I don't know whether you could call it "generally" or not. There have been some that we have allowed something for and put in our machine in the place of them. We allowed a small amount, probably a little more than what the machine would fetch as old iron.

X Q. 77. Do you know the firm of Fowler & Rockwell, engineers and machinists, New York city?

A. I know them personally. I never saw a great deal of their machinery for cutters. They have got a very good reputation.

X Q. 78. Any better firms?

A. No, not for the quality of their work. I don't think that there is anybody who stands higher on cutters than they do.

X Q. 79. I believe they make a specialty of bakers' cutters, do they not?

A. They make a specialty of that class of machinery—cutters—I believe.

X Q. 80. How long have you been in business here?

A. Since '75.

X Q. 81. What do you manufacture?

A. We manufacture bakers' machinery.

X Q. 82. Exclusively?

A. No; we manufacture pulleys, but then we make a specialty of bakers' machinery; we do but very little outside of that line of business.

X Q. 83. You cater to the bakers' trade?

A. Yes, sir; we make a specialty of bakers' machinery.

JOHN MCMAHON.

MARTIN DETAMBLE, a witness produced, sworn and examined on the part of the defendants, deposed and testified as follows:

Q. 1. State your name, age, residence and occupation.

A. Martin DeTamble; 35; 303 South Robey; machinist.

Q. 2. Where are you in business?

A. On Clinton and Monroe streets, with Roth, McMahon & Company.

Q. 3. What experience have you had, if any, in making bakers' machinery?

A. I have had 15 years, off and on, on bakers' machinery. I have been longer in the machinist's business—about 20 years.

Q. 4. Do you know what dies for cutting crackers, cakes, bretzels and the like articles, are?

A. Yes, sir.

Q. 5. Did you ever have any experience in the making of such dies?

A. A number of years' experience in making cracker dies.

Q. 6. About how many different kinds of forms or shapes have you seen made for cutting cakes, crackers, etc., on a flat surface?

A. That would be very difficult for a man to tell unless he took a catalogue and enumerated them—a great number—hundreds of different kinds.

Q. 7. Where a die is wanted to cut any particular form of old product or article, and an order is given to you to make such a cutter or die, how do you do it?

A. I either take the cracker or drawing, such as the man wants—whatever design he wants—he either gives me a cracker or drawing of any kind—and proceed to make the pattern and sharpen it up.

Q. 8. If the article which the die was intended to cut was some kind of cracker or cake, and a sample were furnished you, would you make the die to correspond with the sample. Is that what you mean?

A. Yes, sir.

Q. 9. How is it about the making of dies to cut bretzels? State whether you proceed in the same way.

A. I would.

Q. 10. State whether or not, from your experience in making different dies to cut crackers, cakes, bretzels, etc.,

on flat surface, any invention would be required to make a die for such purpose.

Objected to because no foundation has been laid for expert testimony.

A. I should not consider it so.

Q. 11. State whether or not it requires anything more than ordinary skill to make such.

Same objection.

A. No, I think not.

Q. 12. Have you ever seen different kinds of hard doughs for making crackers, bretzels, etc.?

A. Yes, sir.

Q. 13. Did you ever see such doughs cut on different kinds of machines?

A. Yes, sir.

Q. 14. State whether or not a die for cutting bretzels will work successfully and satisfactorily on other kinds of hard dough, or not.

A. It will.

Q. 15. State whether or not there is any difference in the different kinds of doughs that would require a different kind of die to cut them.

A. There is not, in my opinion.

Counsel for complainants objects to the foregoing testimony as inadmissible, incompetent and improperly adduced as rebutting evidence.

Cross Examination by Mr. Edson.

X Q. 16. Did you ever prepare any bretzel dough for a machine?

A. I never prepared any; no, sir.

X Q. 17. When did you first make a bretzel die?

A. I could not tell you now.

X Q. 18. As nearly as you can remember?

A. I could not tell you.

X Q. 19. Did you ever make one?

A. Yes, sir.

X Q. 20. When?

A. Sometime ago; I could not tell the exact date; it is over a year ago—a great deal over a year ago—but just what date it was I could not tell you.

X Q. 21. Did you ever hear of a bretzel die before you made one?

A. I made the first bretzel die that I ever saw.

X Q. 22. Or pattern?

A. I did not make the pattern.

X Q. 23. You made the die from the pattern?

A. A casting was made from the pattern; I sharpened up the casting.

X Q. 24. Who made the pattern?

A. I could not tell you.

X Q. 25. Where was it made?

A. In Chicago, I think; I don't know positively.

X Q. 26. Who furnished the pattern to you?

A. That I could not say positively; it was furnished at the office. I was with Roth, McMahon & Co.

X Q. 27. You do not claim, then, to be the first designer of a bretzel die?

A. I do not.

X Q. 28. What do you mean by "sharpening up?"

A. I mean to take the casting and file it sharp.

X Q. 29. The edges?

A. That is, to file to an edge.

X Q. 30. You do not change the contour or form or appearance of it, in sharpening it?

A. No, sir; no more than filing it one way or the other a little bit; that is all.

MARTIN DETAMBLE.

STATE OF ILLINOIS, } ss.
COOK COUNTY. }

I, E. F. Hubbard, a Notary Public in and for said county, in the state aforesaid, hereby certify that all the proceedings aforesaid were had as stated, in the cause named in the caption hereto; that I was attended by the counsel named in said caption at the time and place therein stated, and by the witnesses, William Nichol, Charles Sawyer, George B. Durkee, Henry Callahan, Jacob Roth, John McMahon and Martin DeTamble, who were of sound mind and lawful age; that said witnesses were first duly sworn to testify the truth, the whole truth and nothing but the truth, in said cause; that their depositions were reduced to writing in their presence and from their statements; and that after carefully reading the same over to them they subscribed the same as and for their depositions in said cause.

I further certify that I am not solicitor or of counsel for either of the parties in said cause, nor in any way interested in the event of said cause.

In witness whereof I have hereunto set my hand and notarial seal this 18th day of October, A. D. 1884.

E. F. HUBBARD,
Notary Public.

STIPULATION.

The said complainants having this day paid defendants $100, as provided, the order of said court entered in said cause on March 23, 1885:

It is hereby stipulated that complainants may take the depositions of George W. Earhart, Wm. M. Crawford, John C. Taylor and Alexander Rarig, before C. O. Hunter, Esq., Notary Public, No. 1 Horton block, North High street, Columbus, Ohio, beginning at 10 a. m., Monday, April 20, 1885, and that the thirty days given for taking said depositions by said court, on March 23d, shall be extended one day, and that said depositions may be read in said cause in same manner and with same effect as though taken before a regularly appointed examiner.

FRANK BAKER,
For Complainants.

BANNING & BANNING,
Solicitors for Defendants.

We hereby consent that Mr. C. P. L. Butler, Jr., write the annexed depositions.

We consent that the exhibits unattached to the depositions, and the depositions, be sent by the Notary directly to Frank Baker, one of the solicitors for complainants, at Chicago.

We waive all irregularities in said depositions and in the caption and certificate thereof.

BANNING & BANNING,
For Defendants.

E. L. TAYLOR,
For Complainants.

Dated Columbus, Ohio, April 21st, 1885.

Proofs taken before me, C. O. Hunter, a Notary Public of the County of Franklin, State of Ohio, for final hearing in a cause pending in the Circuit Court of the United States for the Northern District of Illinois, wherein Theodore H. Butler, George W. Earhart and William M. Crawford are complainants, and George Steckel and Frederick Steckel are defendants, pursuant to the annexed consent, and at the time and place therein mentioned.

Present—Edward L. Taylor, on behalf of plaintiffs, and Thomas A. Banning, on behalf of defendants.

JOHN C. TAYLOR, of lawful age, being by me first duly sworn, as hereinafter certified, deposes and says as follows:

Q. 1. State your name, age, occupation and place of residence.

A. My name is John C. Taylor; I am forty-seven years of age; I am superintendent of Columbus Machine Company, and a machinist by occupation, and my place of residence is Columbus, Ohio.

Q. 2. How long have you been engaged in your occupation of a machinist, and what experience have you had as such?

A. Twenty-eight years; experience of a general machinist. I was with H. & F. Blandy, of Zanesville, twenty-two years; they carried on a general machine business, making portable and stationary engines and doing a general machine business. The last eleven years I was with them I was foreman of their shops.

Q. 3. State what relation you have sustained to the Columbus Machine Company, and how long you have been with them.

A. I have been foreman of their machine shops one year and general superintendent for the last year.

Q. 4. State whether you have seen and examined the Marvin bretzel cutter, the original of which is now shown

you and of which defendants' exhibit No. 7 is one of the cups, and if so, state whether or not said machine had been used in the practical operation for which it was intended, namely, the cutting of bretzels from sheet dough?

A. I have examined it and, to the best of my judgment, it had not been used, as upon the examination the original filings were adhering to the cutter and it could not have been used without the filings being removed by the action of the cup.

Q. 5. Please state whether or not, in your examination of said Marvin bretzel cutter, the moulding sand still adhered to the bearing on said machine.

A. I found sand adhering to it, but whether it was moulding sand or not I would not testify; to the best of my knowledge it was.

Q. 6. State whether or not the moulding sand, or such sand as you found adhering to the bearing of said machine, would have been there if said machine had been used in practical operation.

A. It could not.

Q. 7. State if, in your examination of said machine, you found any evidence that said machine had been used in the practical work of cutting bretzels from sheet dough.

A. I did not.

Q. 8. State whether or not you have seen and examined defendants' exhibit Nos. 14 and 15, representing dies or punches for cutting letter & and B, and have you worked, or seen the same worked, and if so, with what result? (Above exhibits here shown witness.)

A. Have examined them and seen them worked on dough. As cutters, I do not consider them a success; as a stamp, they might work, but cannot cut unless the waste dough or cuttings have some way of passing off, which in my examination I do not find.

Q. 9. State whether or not you mean that the tubes in

the centre of said letters have no outlet, or whether they are so constructed that the dough cannot be forced through them in practical operation of said machine.

A. They are not constructed in a practical manner. To the best of my knowledge the dough will stop the tube up without doubt, and when it does that, it is not a cutter.

Q. 10. You have said, in answer to question number 8, that said machine might do as a stamp, but not as a cutter. Please state more fully what you regard as the difference between a stamp and a cutter.

A. I mean that the machine, to be a cutter, must relieve itself of all fragments of dough or cuttings, which this machine does not. I mean by stamping, that it is not necessarily a cutter, but simply to make the impression of the letters or forms that may be desired.

Q. 11. State whether or not you have seen in practical operation the complainants' bretzel machine, as represented in the patent sued on in this case, and if so, state what you found the fact to be as to said machine being a practical, good working machine, or otherwise.

A. I have seen the said machine in practical operation, and would pronounce it, in my best judgment, as near perfect as possible for the purpose used. It did good, practical work.

Cross Examination by Mr. Banning.

X Q. 1. What experience have you had, if any, in machinery used by bakers?

A. In the past two years considerable experience with bakery machinery, and also have made one cutter complete and done considerable repairs on others.

X Q. 2. For whom did you make this complete cutter, and make these repairs?

A. Butler, Earhart & Co.

X Q. 3. On what machine was it that you found filings and sand, as you have testified in your direct?

A. On that machine (pointing to one in the room). I believe they call it the Marvin cutter.

X Q. 4. You mean their large form containing four cutters, and out of which one has been taken?

A. I do.

X Q. 5. Did you find any filings or sand on their single cutter, marked defendants' exhibit No. 7?

A. At the time of my examination of said cutter; yes.

X Q. 6. Do you mean this single cutter marked defendants' exhibit No. 7?

A. To the best of my knowledge, that is the cutter.

X Q. 7. Will you swear positively that you found sand and filings on the single cutter marked defendants' exhibit No. 7?

A. At the time of my examination, and believing that to be the cutter that I examined most carefully, to the question I answer, yes, at that time.

X Q. 8. Will you swear positively that this cutter, defendants' exhibit No. 7, was the identical cutter you examined and on which you found filings and sand?

A. To the best of my knowledge, yes.

X Q. 9. Who had the cutter, and where was it when you examined it?

A. At the office of Butler, Earhart & Company.

X Q. 10. How long had it been there?

A. That I know nothing about.

X Q. 11. Where was it at their office?

A. Setting on their desk in the office.

X Q. 12. So that anybody going into their office could have seen and examined it?

A. That I know nothing about—the time it had been there—but know it was there for my examination.

X Q. 13. Who examined it, or looked at it, or was present the time you examined it?

A. Mr. Earhart, Mr. Crawford and myself.

X Q. 14. . Was there any attempt, so far as you saw, to take particular care of it, so that nobody coming into the office could see or handle it?

A. Only so far as I could see that people coming into the office would be permitted, or suppose that they had any right, to interfere with anything placed upon the proprietor's private desk.

X Q. 15. Was it taken out of any drawer when you came to examine it, or placed in any drawer when you were done?

A. To the best of my recollection now, it was not, but I think was unwrapped from a bag or sack, as near as my recollection goes.

X Q. 16. Do you know that this filing and sand found on the cutter, defendants' exhibit No. 7, had not been placed there by some one?

A. In regard to that, I can say nothing.

X Q. 17. If somebody had placed it there for the purpose of allowing you to find it, you are not aware of it; is that what you mean?

A. That is what I mean; yes, sir.

X Q. 18. That might have been done, as far as you know, might it not?

A. Such a thing could be possible.

X Q. 19. If the cutter had been filed for the purpose of sharpening it after it had become dull from use, filings would be produced such as you found, would they not?

A. Such a thing might occur.

X Q. 20. Where did you see these cutters for the character & and the letter B tried, as you have testified in your direct?

A. In the office of the Columbus Machine Company.

X Q. 21. Who was present at that trial or experiment?

A. Mr. Earhart and myself.

X Q. 22. How were these cutters for B and & tried?

A. Tried on a piece of rolled dough that Mr. Earhart brought with him wrapped in paper.

X Q. 23. How were the cutters applied to the dough?

A. The dough was laid upon a desk and the cutters pressed down upon it in the only proper way that it could be applied.

X Q. 24. What way was that?

A. By taking the cutter in your hand, laying it upon the dough, pressing the cutter down and attempting to cut the letters out.

X Q. 25. The attempt was made then by hand power, was it?

A. It was.

X Q. 26. How are these cutters generally used in actual work in bakeries—by hand or machine power?

A. By hand machine and by power machine.

X Q. 27. At the trial or experiment that you have testified about, these cutters for a B and & were held in the hands and pressed down upon the dough, as I understood you. Is this correct?

A. It is.

X Q. 28. In saying that such cutters are used in actual work at bakeries, both by hand and power machine, do you mean, by hand machines, that the separate cutters are taken in the hands and pressed down upon the dough, as was done by you in the experiment about which you have testified?

A. Such is not my meaning.

X Q. 29. As a matter of fact, such cutters are placed in machines which are run by power or by hand, usually a number of them, so as to cut a number of cakes, letters, bretzels, etc., at the same time, in the actual work of bakeries, are they not?

A. Yes.

X Q. 30. As I understand you, you have never seen

these two cutters, about which we have been talking, marked defendants' exhibits numbers 14 and 15 and intended to cut the letter B and the character &, actually operated or attempted to be operated in a machine run either by hand or by power, as they are usually worked in barkeries; is this correct?

A. I have not; it is correct.

X Q. 31. How many letters B, or characters &, did you try to cut at the trial which you witnessed at the office of the Columbus Machine Company?

A. About half a dozen of each; did not count them.

X Q. 32. This was the only trial of these cutters which you ever witnessed; is that correct?

A. It is.

Re-Direct Examination by Mr. Taylor.

R-d. Q. 1. When you examined defendants' exhibit number 7 and found filings, sand, etc., as you have testified, state whether or not the same appeared to be original filings and sand adhering from original castings.

A. To the best of my ability, I would answer that they had not the appearance of being new.

R-d. Q. 2. Did they or did they not have the appearance of being such as would adhere to the machine or cup from its original construction?

A. They had the appearance of being there from the first, so far as I was capable of judging.

R-d. Q. 3. Did you examine the whole machine, the Marvin cutter, and all of the cups—five cups, or only one cup?

A. My recollection is that I examined three of the cups and found the same appearance in all that I examined.

R-d. Q. 4. State whether or not the pressure or power that you applied to the dies for cutting letter B and character & was equal to, or greater or less, in the test which you

made with Mr. Earhart, than that which would ordinarily be applied in practical use.

A. I should say the pressure was greater than would be allowable on a machine. My reason for this is that the pressure exerted upon the cutters by hand would, in the machine, if applied with the same force, no doubt, cut through the apron that carries the bretzel or dough, thereby ruining the efficiency of the machine.

Re-Cross Examination by Mr. Banning.

R. X Q. 1. In making the trial with the cutters B and & on the desk of the Columbus Machine Company's office, did you cut through the dough and injure or mar the desk in any way, or that on which the dough lay?

A. We did not, because the letter B and & choked with dough, preventing the cutter from passing through, or otherwise, in my opinion, it would have cut and marred the desk.

R. X Q. 2. You think these cutters, if put into a machine and applied with the same power or pressure that you employed at the trial, would cut through the dough and injure or destroy the apron on which the dough is placed?

A. My answer is that they would not, because the choking of the cutter, as I have formerly stated, will not allow the cutting out of the letter, but will only stamp them not cut them.

R. X Q. 3. If the holes for the passage of the scrap, which you say choked up, were made larger, would they then choke up?

A. In my judgment, that would be remodeling the machine and thereby, as you can do with other machines that are not practical at first, you may overcome difficulties and make practical what, in the original machine, was not.

R. X Q. 4. I will ask you again if they would have

choked up, in your opinion, if the scrap passage had been enlarged somewhat?

A. I will answer, that so far as the scrap passages are concerned, if enlarged, I see no special reason why the machine could not be made to work.

JOHN C. TAYLOR.

GEORGE W. EARHART, of lawful age, being by me first duly sworn as hereinafter certified, deposes and says, as follows:

Q. 1. State your name, age, occupation and place of residence.

A. George W. Earhart; about 50 years of age; manufacturer of grocers' goods; Columbus, Ohio. I am one of the complainants and have already testified in this case.

Complainants offer in evidence a certified copy of a letter from the files of the Patent Office, dated January 8th, 1885, addressed to Edson Bros., and signed Schuyler Duryee. Same marked Complainants' Exhibit Earhart No. 1, April 20th, 1885.

Defendants' counsel objects to the admission of the foregoing instrument in evidence as irrelevant and immaterial.

Q. 2. Please examine complainats' exhibits Earhart Nos. 2 and 3, herewith shown you, and now offered in evidence and attached to their deposition, and explain the same.

A. They are photographs of the Lampert and Huber patent cylinder bretzel machine. Exhibit No. 3 shows the machine with the dough passing through it, and Exhibit No. 2 the machine not in operation.

Q. 3. Please examine the complainants' exhibit, Earhart No. 4, April 20th, 1885, consisting of nineteen diagrams or sheets of drawings, numbered from 1 to 19 consecutively, now offered in evidence and herewith attached, and made a part of their deposition, and, having examined said exhibit, explain the same.

A. Sheets Nos. 1, 2 and 3 of this exhibit show bretzels of three different sizes, column of figures on the left hand side being top, bottom, front and side views respectively of complainants' bretzel. The columns on the right are similar views of the hand made bretzel. Sheet No. 4 has, on the left hand side, series of views of the bretzel made on the complainant's machine, on the opposite side similar views of a bretzel made by die, which is an exact counterpart of the configuration of a die made in imitation of a hand made bretzel. In the views, the hand made bretzel the arm *k* which corresponds to the arm *a'* in complainants' bretzel, is about one-half as large as the arm *l*, which it intersects, whereas the arm *a'* of complainants' bretzel is the same size as the arm with which it intersects. Sheets Nos. 5 and 6 are plaster casts with section views of each—left hand column of figures representing views of casts of complainants' bretzel, and the right hand column that of casts made from hand made bretzels. In all of the sectional views the cast of complainants' bretzel, the grooves representing the bow, loops, arms, and the twist, are all on the same plane, whereas, in the sectional view of the cast of the hand made bretzels, said parts are on different planes. Sheet No. 7 shows on the left plan and sectional views of complainants' die; on the right the plan and sectional views of a cutter the counterpart of a hand made bretzel. Sheet No. 8 shows a drawing of complainants' exhibit A, showing a plan view, also a side elevation partly broken away to show one of the creasers, and their relative position in reference to the cutting edge of the die. Sheet No. 9 shows a perspective view of complainants' exhibit, March, 1882, with the side partly taken away. Sheet No. 10 shows complainants' exhibit brass cutter, in perspective and in section, the latter exhibiting the relative position of the creasers with reference to the cutting edge. Sheets Nos. 11, 12 and 13 are views of complainants' exhibit New York machine. In No.

11 see section on *y y*, and in No. 13 the creasers are on the same plane as the cutting edge of the dies. Sheet No. 14 is a bottom plan view and side elevation of defendants' exhibit No. 1. Sheet No. 15 exhibits a plan view, a side elevation and a section of defendants' exhibit No. 14, the small tubular punches being the same diameter throughout their whole length. Sheet No. 16 shows a plan view, side elevation and a section of defendants' exhibit No. 15. The sectional view shows one of the internal tubular punches of the same diameter throughout its length, while the other one has a tapering bore, the cutting end being the largest. Sheet No. 17 shows a plan view, a detailed view, a detailed elevation and detailed section of defendants' exhibit No 7, which, aside from the clearers, is made up of five separate pieces, consisting of one outside shell, one inside cutter (containing three tubes), three creasers, the latter making five creases, while the cups in our machine are made in one solid piece. In the plan view all the creasers are in place. In the detailed view the internal cutter, four of the creasers and the securing rod have been removed. In the detailed elevation and detailed section of the internal cutter the former shows one of the slots over which the creasers are placed, and the latter the socket for receiving the twist. Sheet No. 18 shows a plan and side elevation, partly broken away, of defendants' exhibit No. 2. Sheet No. 19 shows a side and end elevation of the Marvin cutter, from which defendants' exhibit No. 7 was taken. This was drawn after said exhibit No. 7 was removed therefrom.

Q. 4. Have you examined the Marvin cutter now present, and from which defendants' exhibit No. 7 was taken? and if so, state whether, from your examination, the same had been subjected to practical use, or had the same been newly made and constructed?

A. I have taken apart and examined the said Marvin cutter and found evidences present of its never having been

subjected to actual use. These evidences consisted of filings produced in the construction of the machine and moulding sand still remaining upon the bearings. These filings were in greater part found on the inner walls of the tubes through which the scrap passed. If said cutter had been operated upon a sheet of dough, a few evolutions would have entirely cleared off both the filings and the moulding sand.

Q. 5. Have you worked the Marvin cutter and practically tested the same; and if so, with what result as to successful operation or otherwise?

A. I worked said machine and produced goods with it, samples of which I now identify and produce. They are contained in four small boxes, which said boxes are contained in a brown box.

Said goods (bretzels) offered in evidence and marked "Complainants' Exhibit, Earhart Number 5. April 20th, 1885."

The exhibit mark is placed on the outside and inside of said brown box, and the sub-numbers 1 to 4 placed on the four small boxes.

(Witness continuing.) Box No. 4 of said exhibit contains unbaked product of the dies cut from the thick sheet of dough. Box No. 2 contains the same in a baked form. Box No. 3 contains the product of the dies when cut from a thinner sheet of dough. Box No. 1 contains the same as No. 3, in a baked form. I found in operating the Marvin machine upon a sheet of dough of sufficient thickness to show the twist that the dough was forced up into the openings surrounding the clearers. The creasers cut down into the dough to such an extent as to almost cut the bretzel into pieces. The plastic bretzels thus cut stuck tight to the die and could not be removed by operation of the clearers. In order to remove them a sharp instrument had to be used with the hand, and even then great care had to be exercised to get them out whole. When dies were operated upon a

thin sheet of dough so that the product would not remain wedged into the die, no laps or twist was shown and the bretzels were but partially formed. Altogether said cutter is totally worthless as a practical machine for the purpose for which it was made. The creasers showing the laps and the twists in the Marvin cups are in three separate pieces fastened with screws, while the other cutting parts of the cups are formed of two separate pieces; this of itself would make it impracticable as a bretzel machine.

Q. 6. Have you examined and subjected to practical operation defendants' exhibits Nos. 14 and 15 for cutting letter B and character &, and if so, state the result of your examination and practical test and state whether or not, in your opinion, from said examination and test, said exhibits can be made to perform well as machinery for cutting sheet dough into letters and characters.

A. I have examined said exhibits and worked them upon dough. So far as these exhtbits represent a practical machine for cutting from dough cakes or crackers in these shapes, they are a fraud. The inner tubes of exhibit No. 14 are so constructed that they will not pick up and carry off the inner scraps, and the same may be said of exhibit No. 15. I found in testing these two exhibits that after three or four operations upon a sheet of dough that the scrap cut out by these inner tubes was forced into them so tight that they could not be dug out with the blade of a pen knife. After they became so clogged the machine was totally inoperative. If a series of dies like their exhibits were mounted upon a machine and put to practical use for cutting out of dough these forms, they would be absolutely worthless. I have here a sample of the product made on these exhibits at the time I tested them, after the fifth or sixth impression.

Said product offered in evidence, and same marked Complainants' Exhibit, Earhart No. 6, April 20th, 1885.

This said exhibit shows the operation of these dies upon

the dough after the tubes had become clogged with the scrap after the sixth impression. Under a heavy pressure, fully equal to that which would be brought upon them by a power machine, they refused to cut out the shapes, but simply stamped the impression. No amount of pressure could be brought upon them sufficient to make them cut out these shapes. If the pressure was extreme the dies would simply displace the dough and not cut it.

Q. 7. State whether or not you have made any casts, dies or models of bretzels. If so, state the facts in that respect and explain the same.

A. I have made other casts and dies and have produced goods on them.

Plaster cast produced and marked in evidence, Complainants' Exhibit, Earhart No. 8, April 20th, 1885.

Also plaster cast marked in evidence, Complainants' Exhibit, Earhart No. 8, April 20th, 1885.

Also a wood bretzel die marked in evidence, Complainants' Exhibit, Earhart No. 9, April 20th, 1885.

Also a box containing two small boxes which contain the product of the above Exhibit Earhart No. 9, same marked in evidence, Complainants' Exhibit Earhart No. 10, April 20th, 1885.

Also a box containing a baked and unbaked product of complainants' machine sued on in this action. Same marked in evidence, Complainants' Exhibit, Earhart No. 11, April 20th, 1885.

Also a box containing assorted sizes of hand made bretzels. Same marked in evidence, Complainants' Exhibit, Earhart No. 12, April 20th, 1885.

(Witness continuing.) Complainants' Exhibit, Earhart No. 7, is a plaster cast of bretzel made upon complainants' machine sued on herein, showing grooves of the bow, loops, arms, all substantially on the same plane. Complainants' Exhibit Earhart No. 8, in a plaster cast of a hand made bretzel,

showing the grooves on different planes. Complainants' Exhibit, Earhart No. 9, showing a wood die made to conform to a plaster cast of a hand made bretzel. Complainants' Exhibit, Earhart No. 10, sub-number 1 thereof, contain bretzels made upon the wood die, Complainants' Exhibit, Earhart No. 9, run from a thick sheet of dough. Box sub-number 2, of said exhibit No. 10, contains bretzels made upon Complainants' Exhibit, Earhart No. 9, run from a thin sheet of dough. Complainants' Exhibit, Earhart No. 11, box marked sub-number 2, contains bretzels made upon defendants' machine, sued on herein. Sub-number 1, of said exhibit 11, contains baked bretzels made on complainants' machine sued on herein.

Six o'clock p. m., adjourned to Tuesday, April 21st, 1885, at 8:30 a. m. Tuesday, April 21st, 1885, 8:30 o'clock a. m., same appearances.

GEORGE W. EARHART, witness, continuing in further answer to question No. 7:

Some of the distinguishing features between the casts and dies of complainants' machine sued on herein and those made to conform to a hand made bretzel are these: That the grooves forming the bow, the loops, the arms and the twist in our die sued on herein are all on one continuous plane, broken only by the creasers. The creasers are on a different plane, raised within the grooves, while in a die and cast made to conform to a hand made bretzel, as in complainants' exhibit, Earhart No. 9, the grooves are on different planes, and the end creasers are on a plane below the bow, which they join, and are the reverse of that shown in complainants' die in patent sued on. On dies constructed with the grooves on different planes, as shown in complainants' exhibit, Earhart No. 9, when operated upon a sheet of dough of sufficient thickness to fill them up and form the shape of a bretzel, the result is that the more shallow portions of the groove or die are filled up first and thus prevent

the cutting edge of the die from descending far enough to cut out the bretzel and thus preventing the dough upon which they are operated from filling up the deeper portion in the grooves. And if the dough was forced into these grooves by hand so that it would fill all parts of the grooves (as I had to do it in order to make full form pretzels in experimenting) then the dough would be forced also into the chambers through which the clearers work, which, in connection with the points or laps running under the bow and extending beyond its outside line, fastens the bretzel so firmly into the die that they cannot be discharged by clearers and could not be taken out by hand, unbroken, except with the greatest care, even if they were cut entirely off by the use of the hand. When these dies are operated upon a thinner sheet of dough adapted to the shallow portion of the grooves, the product would only show the outline of a bretzel in an unfinished state, minus the twist and the end laps. A series of dies of this character, mounted upon a machine and put to practical use, would be an entire failure for making bretzels, while, on the other hand, a series of dies like those represented in complainants' patent sued on, mounted on a machine and put to practical use, are a complete success. Bretzels made upon a die the exact counterpart of a cast of a hand made bretzel, if they could so be made, would be unsightly, uneven and ill-shaped, as shown in complainants' exhibit, Earhart No. 10. They would break easily in shipping, being very uneven. Some portion of them being too small and other parts too large they bake unevenly. While the larger parts are baking the smaller portions char or burn. It spoils the color and gives them an unpleasant taste and injures their sale. For these reasons hand made bretzels are mostly made large, whereas bretzels made upon complainants' machine, sued on herein, are uniform in color, size and shape; the bow, arm, loop and the twist are nearly of the same diameter, which gives them an evenness

in baking and the uniformity of color throughout, and gives them strength enough to resist pressure or blows and prevents them from breaking in shipment. They can also be packed in a given space in much greater number. Small bretzels, of the size made upon complainants' machine sued on, are greatly preferred to the large ones, such as are made by hand. Our patent machines were the means of introducing the small bretzels to the trade to a great extent. Complainants' die, shown in their patent sued on herein, while it makes a fair imitation of a hand made bretzel, the difference not being noticeable, except to experts, it has the advantages set forth in consequence of the changes as described. They are also unlike dies used by bakers for cutting or stamping out the various kinds of cakes, crackers, etc., in this; they are curved in their longitudinal and transverse axes, instead of being straight. They mould the form and cut out the bretzel at one and the same time and operation. In these particulars they differ from all other dies used by bakers.

Q. 8. State if any person of the firm of Marvin & Company, of Pittsburg, Penn., or connected with or representing said firm, visited the shops of Butler, Earhart & Co., Columbus, Ohio, in the year 1881, and, if so, if you can, who it was that made such visit, the date of the visit, and whether or not said person was allowed to and did examine your machine for the manufacturing of bretzels. State fully all the facts in this connection.

A. Mr. Rumsey, a member of said firm, visited our shops prior and subsequent to June, 1881. The ostensible purpose, as we understood at the time of these visits, was with the purpose in view of purchasing one of our bretzel machines, and, with a view to making a sale of one of these machines to his firm, we showed him our machines. He examined them in detail and departed, saying that they

would consider the matter of purchasing and advise us of their decision at some other time.

Q. 9. State whether you are acquainted with William Gohl, of Baltimore, Md., and if so, what is his business?

A. I am acquainted with Mr. Gohl. He is a bretzel manufacturer and a specialist in that line of business.

Q. 10. State whether or not you sold Mr. Gohl one of your bretzel machines. State also whether you know that he has operated it and is now operating it, and, if so, with what success.

A. We sold him one of our bretzel machines and he is operating it, and has been, since it was set up in his shop, with entire success and satisfaction to himself. The purchase of this machine by him was made about one year ago.

Q. 11. State how many of your machines sued on herein have been sold by you.

A. We have sold four of these machines and have more of them engaged at a price agreed upon at which the parties will take them if they will work satisfactorily when they see them in operation.

Q. 12. State whether or not the royalty on the manufactured goods from your two machines is the same?

A. The royalty which we ask and get on our patent machines sued on herein is uniform with that which we ask and get on the goods made on the Lampert and Huber patent cylinder machine.

Q. 13. State how long it was before your application for patent numbered 274,264, sued on herein, was filed, that you took steps to secure it.

A. Our application was filed July 6th, 1882. It was about six months before that time, in January of that year, that we first took steps to secure it. The application papers were sent to us to be signed about the first of June, 1882. We retained the Messrs. Edson Brothers in the case the

first part of that year, and they sent us papers, reports, etc., in February, March and June, 1882.

Q. 14. Are you acquainted with Jacob Roth, of Roth, McMahon & Co., of Chicago?

A. I have no particular acquaintance with Mr. Roth. I know him by reputation, and I have seen him once.

Q. 15. State whether or not you saw him at your own factory; and if so, state when it was, and also state whether or not he examined your machines for bretzel making and your inventions in that behalf. State fully all that occurred and what opportunities Mr. Roth had for examining your shops, machines and inventions, if any.

A. I saw Mr. Roth at our place. He called at our office and was shown through our shops about the time that his firm made the bretzel cutter for Steckel Brothers. Whether he saw or had an opportunity of seeing the invention in controversy or not, I do not know, nor do I remember, if he was told at that time that we had in contemplation the building of such machines.

Q. 16. State whether or not your machine sued upon herein is adapted to a different trade or class of use in baker's business different from that which the Lampert and Huber patent is adapted and intended to supply; and if so, state the facts in this behalf.

A. The Lampert and Huber patent cylinder machine is suitable for those only who desire to manufacture on a large scale and to do a wholesale business in the goods to jobbers. This machine is suitable only to be run by steam power. Our patent machine sued on herein can be run by either steam power or by hand, and can be adapted to the wants of the largest or the smallest bakers, and can be produced and sold at a price which is only a small fraction of that of the Lampert and Huber patent machine.

Defendants' counsel objects to any comparison being instituted between the patent sued on and the Lampert and

Huber patent, as such latter patent is in no way involved in this suit.

Q. 17. State whether you have the means of knowing, and do know, the general reputation of Roth, McMahon & Company, of Chicago, as to using inventions and patented improvements in baking machines and devices, without authority from the owner, or of infringing upon the rights and patents of others; and if so, state what that reputation is.

Defendants' counsel objects to the question as being immaterial and irrelevant, for the reason, among others, that the parties inquired about are not parties to this suit.

A. I have the means of knowing what their general reputation is in this respect, to some extent, and have some information in this direction, which is to the effect that they do so use patented improvements claimed by others as their exclusive property, without authority.

Counsel for defendants, in accordance with the understanding of all parties, now at this point objects to each and every of the foregoing exhibits offered in evidence during the direct examination of this witness, as being irrelevant, immaterial and possessing none of the requisites of evidence —the same having been made by the complainants without the knowledge or participation of the defendants, or any one representing them.

Cross Examination by Mr. Banning.

X Q. 1. How long has the Marvin cutter been in your possession, or the possession of the complainants?

A. The Marvin cutter has been in our possession several months; don't remember precisely how many.

X Q. 2. During that time, where has it been kept?

A. During that time it was kept wrapped up in cloths, placed in a box and stowed away in our office.

X Q. 3. During that time, how many persons about the office or works could have examined it?

A. None, except the members of the firm.

X Q. 4. Why?

A. Because persons in our employ and others who visit the office do not and are not allowed to take liberties of that kind.

X Q. 5. Is there no one in the office besides members of the firm?

A. Yes; there are one or two other persons whose business is in the office.

X Q. 6. Do not employees of the works frequently come into the office?

A. Yes, sir; they do when called.

X Q. 7. Do they never come in unless specially called in?

A. No; they do not, except they come in to make inquiries in regard to matters in regard to their special departments.

X Q. 8. Do not parties who are not in the employ of the firm frequently come into the office?

A. Yes; they do, many of them.

X Q. 9. This Marvin cutter was not locked up in any vault or safe, was it, during the several months it was in your office?

A. It was not, but it was boxed up.

X Q. 10. Was the lid of the box locked or nailed down during all the time this cutter was standing in your office?

A. No, sir; it was not. It was simply tacked down after being taken off, to keep it in its place.

X Q. 11. Was any special order or instruction given to your clerks or employees to the effect that the cutter was not to be seen or examined by any of them?

A. No, sir; there was not, as it did not seem necessary to do so, as they never interfere with anything of that kind

placed in our office, and none of them, to my knowledge, knew what the box contained or what this cutter was.

X Q. 12. If these cutters had been filed for the purpose of sharpening them after they had been in use, would not filings such as you say you found in the cutters have been produced?

A. They would.

X Q. 13. If somebody had placed them there where you found them, you had no means of knowing that fact, did you?

A. None, excepting that no one could have so done without the knowledge of some member of the firm, some one of which remains in the office during business hours, and the office is locked at other times; and again, if some one had so placed them purposely, they would not have had the appearance, in connection with the surfaces to which they adhered, which they did have.

X Q. 14. Why?

A. Filings taken from other bodies and so applied to the surface of these dies would have looked new and shown evidence of having been so applied.

X Q. 15. Did you test the filings, or have them tested, to determine whether they came from the same metal which the dies were made of?

A. We examined them very closely with a view to that.

X Q. 16. How?

A. We removed them with the finger and placed them upon paper to ascertain what they were.

X Q. 17. Did you examine them through magnifying glasses, or have any chemical tests made to determine whether they came from the metal of which the dies were made?

A. No, sir; we did not. We examined them with the naked eye, and were satisfied they were the filings incident to the finishing of the dies.

X Q. 18. Have you got those filings yet?

A. We have not.

X Q. 19. You understand, do you not, that different kinds of iron possess different kinds of minute crystals and fibres, so that by chemical and other scientific tests it is easy to determine whether any particular filing came from any particular specimen of metal?

A. Crystals or fibres might be of different shape, but all of the same character. Chemical tests would not show or determine that they came from any particular specimens, but would show the particular character of the specimens from which they came.

X Q. 20. Do you mean to say that it cannot be determined by chemical or other scientific tests that any given specimen of filings did not come from any particular specimen of iron?

A. It could not be determined from such tests what particular specimen they were obtained from, as many specimens might be exactly of the same character.

X Q. 21. I will put my question this way: You say you found some filings on the Marvin cutters; could it be determined by any chemical or scientific tests whether the filings which you found on the Marvin cutters did not come from those cutters?

A. They could by scientific tests determine whether they did or did not come from those cutters.

X Q. 22. And you made no such tests?

A. We did not. We simply examined the filings adhering to the cups with a view of satisfying ourselves that they were filings made in the manufacture of the cups, and they had that appearance.

X Q. 23. And from the fatt that you found some filings on those cups, you ask the court to disbelieve the parties who made the cutters and testified to their having been

used. Does this state your position with reference to the filings?

A. Not exactly. I testified as to the finding the filings in the cups and the moulding sand on the bearings, with a view to show that the machine had never been subjected to practical use. I was not aware that the parties who made the machine claimed that it ever had been put to practical use, but that it was intended for that purpose, but when tested was found to be a failure and thrown to one side. I mean by the foregoing part of this answer that I did not understand that the parties who made it and who own it had testified in this case that they had put their machine to a practical use, although Mr. Rumsey, one of the members of the firm of Marvin & Co., stated to Mr. Baker and to Mr. Banning, in my presence, that they had this machine in constant use, and he exacted of them a promise to return to him the exhibit defendants' No. 7 without delay, so it could be used with the machine from which it was taken.

X Q. 24. The experiment or trial of letter B and the character &, about which you have testified, was the same as that testified about yesterday by Mr. Taylor, was it not?

A. I experimented with them in connection with him, and experimented with them when he was not present.

X Q. 25. How did you apply those dies for the B and & to the dough?

A. I placed the dough upon a table and operated the dies upon it by my two hands.

X Q. 26. You have never tried these dies in a machine, have you?

A. I have not.

X Q. 27. Did you notify the defendants, or Roth, McMahon & Co., or defendants' solicitors, that you were going to make a trial or experiment with those dies and invite them to be present?

A. They knew nothing of my intention in that direction.

X Q. 28. When did the complainants, or any of them, complete the invention described in the letters patent sued on?

A. I believe I have already testified as to that on a former occasion.

X Q. 29. Please state again.

A. I could not give a satisfactory answer to that without reference to files that I have not with me. It was a long time previous to the date of the application, what length of time I could not now say, for the reason stated.

X Q. 30. How many machines or cutters like those described and claimed in patent sued on are in use at the present time?

A. There is about one in use, but there is another one that has just been finished and ready to be sent to the parties that bought it.

X Q. 31. The complainants themselves use the Lampert and Huber machine, do they not?

A. Not exclusively. We use a Lampert and Huber machine to turn out bretzels for the trade which we sell. We also use our own patent machine, which we run for the purpose of exhibiting it to parties desiring to purchase, and sometimes to a greater extent than that.

X Q. 32. Have any parties, after having used your cutter, under the patent sued on, thrown them aside or ceased to use them?

A. There is no case in which this was done.

X Q. 33. Have Roth, McMahon & Co. ever used any machine of any kind under patents owned by by your firm?

A. I do not understand that they use machines; I understand that they make machines.

X Q. 34. Have they made and sold any machines of any kind under any patent owned by your firm, leaving out of question the machine now in controversy?

A. They have not made any machine under any of our patents, leaving out the machine in controversy.

X Q. 35. Who told you that they were in the habit of making patented improvements belonging to others?

A. J. W. Ruger told me that they were making machines that were infringing upon his patents. Henry S. Dosh, of Baltimore, also stated to us that they were manufacturing machines that were an infringement of his rights. Our firm also claim the same thing.

X Q. 36. Any others?

A. There are no others that have so stated to me individually.

X Q. 37. You know it to be a fact, do you not, that Ruger and Dosh are business rivals of Roth, McMahon & Co.?

A. I know that Ruger is a manufacturer of the same line of machinery that Roth, McMahon & Co. are manufacturing, but I do not know to what extent, if any, they are rivals or competitors in trade for their machines. As to Dosh, I do not think or know that he is in any sense a competitor of theirs.

X Q. 38. Do you not know that Roth, McMahon & Co. more than a year ago began a suit against Dosh for infringment of one of their patents, and that such suit is still pending?

A. I do not know or remember of ever having heard of that, but I do know that Mr. Dosh has been threatening to bring suit against Roth, McMahon & Co. for infringement of his patents and has stated to me that he has already brought suit against them for infringement.

Re-Direct Examination by Mr. Taylor.

R-d. Q. 1. State whether or not any of your employees at the factory, or any other persons in your employ, had

any knowledge of the contents of the box which contained the Marvin machine from which you took defendants' exhibit No. 7, after it came to your office, and while it was in your office, prior to the time when the same was examined by Mr. Taylor and the members of your firm, except yourself, Mr. Theodore H. Butler and William M. Crawford, your partners.

A. We examined the machine with a view to ascertaining whether it had been or could be put to practical use immediately upon its arrival, and then stowed it away, as before stated, securely, and no other persons about the office, or persons coming or going, had any knowledge that I know of, of what it was or where it came from.

R-d. Q. 2. State what kind of dough was used in your experiments with defendants' exhibits Nos. 14 and 15, concerning which tests you testified in chief.

A. I used cracker dough, such as is ordinarily used for making crackers.

GEORGE W. EARHART.

THE STATE OF OHIO, }
FRANKLIN COUNTY, } ss.

I, Charles O. Hunter, a Notary Public in and for the County and State aforesaid, duly commissioned and qualified, do hereby certify that the above named John C. Taylor and George W. Earhart were by me first severally sworn to testify the truth, the whole truth and nothing but the truth, and that the depositions by them respectively subscribed, as above set forth, were reduced to writing by Mr. C. P. L. Butler, Jr., and, also, so written in the presence of the witnesses aforenamed respectively, and were subscribed by the said witnesses in my presence, and were taken at the time and place in the annexed notice specified, and that the said

C. P. L. Butler, Jr. is not interested in this suit, and he wrote said depositions by consent and agreement of counsel for all parties to said suit.

I do further certify that I am not counsel, attorney or relative of either party, or otherwise interested in the event of this suit.

In witness whereof I have hereunto set my hand and seal of office this 21st day of April, A. D. 1885.

C. O. HUNTER,
Notary Public in and for Franklin County, Ohio.

COMPLAINANTS' EXHIBIT, EARHART NO. 1. APRIL 20TH, 1885. C. O. HUNTER, NOTARY PUBLIC.

DEPARTMENT OF THE INTERIOR,

UNITED STATES PATENT OFFICE.

To all Persons to whom these Presents shall come, Greeting:

This is to certify that the annexed is a true copy from the Records of this Office of a letter from the Chief Clerk of the Patent Office, dated January 8, 1885, to Edson Brothers, Washington, D. C. Recorded in Letter Book 21, pages 25 and 26, Division C.

In testimony whereof, I, Benj. Butterworth, Commissioner of Patents, have caused the Seal of the Patent Office to be affixed this 28th day of January, in the year of our Lord one thousand eight hundred and eighty-five, and of the Independence of the United States the one hundred and ninth.

[SEAL.]

BENJ. BUTTERWORTH,
Commissioner.

Jan. 8, 1885.

EDSON BROS.,

No. 917 F St., Washington, D. C.

Gentlemen:—In reply to yours of the 31st ult., there are furnished herewith "the numbers and dates of U. S. Patents, also title of inventions taken out by George B. Durkee, of Chicago, Ills., since 1875, inclusive." No. 250,136, Diag. Sawing Machine, issued Nov. 29, 1881, to George B. Durkee, Chicago, Ills., assignor to Thomas M. Thompson, of same place. No. 256,656, Planes Chuck, issued Apr. 18, 1882, to George B. Durkee, of Chicago, Ills. No. 275,614, Grading and Ditching Machine, issued April 10, 1883, to Wm. J. Edwards and Geo. B. Durkee, Chicago, Ills., assignors to said Edwards. No. 281,653, Machine for Stringing Barbs upon Wire, issued July 17, 1883, to Seth Turner and Geo. B. Durkee, Chicago, Ills., assignors to the Thorn Wire Hedge Co., of same place.

No. 291,584, Machine for Forming Check Rower Wire, issued Jan. 8. 1884, to Geo. B. Durkee, of Chicago, Ills., assignor to the Joliet Wire Check Rower Company, of Joliet, Ills.

By direction of the Commissioner.

Very respectfully,

SCHUYLER DURYEE,

Chief Clerk.

332 COMPLAINANTS' EXHIBIT "B."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of letters patent No. 274,264, granted March 20, 1883, to Theodore H. Butler, George W. Earhart, and William W. Crawford for improvement in "bretzel-cutters."

In testimony whereof I, E. M. Marble, Commissioner of Patents, have caused the seal of the Patent Office to be affixed this [SEAL.] 27th day of March, in the year of our Lord one thousand eight hundred and eighty-three, and of the Independence of the United States the one hundred and seventh.

E. M. MARBLE,
Commissioner.

No. 274,264.

The United States of America to all to whom these presents shall come:

335 UNITED STATES PATENT OFFICE.

THEODORE H. BUTLER, GEORGE W. EARHART, and WILLIAM M. CRAWFORD, of Columbus, Ohio.

Bretzel-Cutter.

Specification forming part of Letters Patent No. 274,264, dated March 20, 1883. Application filed July 6, 1882. (Model.)

To all whom it may concern:

Be it known that we, Theodore H. Butler, Geo. W. Earhart, and Wm. M. Crawford, composing the firm of Butler, Earhart & Co., citizens of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful improvements in bretzel-cutters; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

second part, one-half of all their interest in a certain patent owned by them and bearing date of April 29, 1876, numbered 184,786, issued at the Patent Office at Washington, for improvement in machinery for making pretzels.

2. Should any improvement be made at any time by the parties of the first part in said pretzel machine or any reissue of patent either for the original machine or for any improvement thereon, that the parties of the second part shall have the same interest and rights in these which they have in the original patent above mentioned.

3d. Butler, Earhart & Co., the parties of the second part, in consideration of the interest conveyed to them as above specified, do agree to develop said patent by advertisement and sale throughout the United States wherever the same can be done profitably, to build the machines and transact all business connected therewith,
338½ to facilitate which the parties of the first part agree to give them full control of all sales of rights, territory, machinery, royalties, &c., and of prices thereof, and to execute to said Butler, Earhart & Co. power of attorney to act for said Lampert & Huber in all transactions connected with said patent, machines, rights, royalties, &c.

4. In case it is thought best by all the parties hereto, patents may be taken out in foreign countries for said pretzel machine and improvements.

5. The division of the earnings or profits accruing to the business of selling territory, rights, royalties, or machines.—It is agreed that all monies advanced by Butler, Earhart & Co. or paid out by them in the building of machines, advertisements, or expense of effecting sales or other matters connected with the development of said patent shall first be deducted out and paid to them, reimbursing them for all expenses incurred. Then the balance of said profits (being the net earnings) shall be divided by and between said Lampert and Huber, of the first part, and Butler, Earhart & Co., the parties of the second part, share and share alike.

6. Upon the assignment of patent, as mentioned above, said Butler, Earhart & Co. agree to advance said Wm. Lampert and Henry Huber six hundred and fifty dollars, said am't to be paid back
339 to Butler, Earhart & Co. from the net earnings of the business.

Witness our hands and seals the day and date above written.

WM. LAMPERT. [SEAL.]
HENRY HUBERT. [SEAL.]
THEO. H. BUTLER. [SEAL.]
W. M. CRAWFORD. [SEAL.]
G. W. EARHART. [SEAL.]

Witness for Earhart:
WILLIAM ELY.
Witness:
I. THOMPSON.

Recorded Jan. 11, 1879.
Ex'd: E. A. M.; H. M. H.

Endorsed: Filed Feb. 4th, 1886. Wm. H. Bradley, clerk.

340 "COMPLAINANTS' EXHIBIT 'B.' Jan. 10, 1879. Gilbert H. Stewart, Notary Public."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of an instrument of writing executed by William Lampert and Henry Huber January 10, 1879, recorded in Liber K 23, page 438. Said record has been carefully compared with the original and is a correct transcript thereof.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed [SEAL.] this 27th day of March, in the year of our Lord one thousand eight hundred and eighty-four, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH,
Commissioner.

341 Liber K 23, p. 438.

Whereas William Lampert and Henry Huber, of Crestline, county of Crawford and State of Ohio, did obtain letters patent of the United States of America for certain improvements in "pretzel machines," which letters patent bear date the twenty-eighth day of November, eighteen hundred and seventy-six, and numbered 184,786; and whereas the said William Lampert and Henry Huber are now sole owners of said letters patent and of all rights and interests under the same; and whereas Theo. H. Butler, George W. Earhart, and William M. Crawford, doing business under the firm name and style of Butler, Earhart and Co., at Columbus, Ohio, are desirous of acquiring an interest therein:

Now, this indenture witnesseth: That, for and in consideration of the sum of two dollars to us, the said Lampert and Huber, in hand paid, the receipt of which is hereby acknowledged, we have assigned, sold, and set over, and do hereby assign, sell, and set over, unto the said Butler, Earhart and Company, or to the individuals composing said firm, the equal undivided one-half part of all the right, title, and interest which we have in the said invention as secured to us by said letters patent, and also any and all improvements now made or hereafter to be made upon said patented machine or in or on any machine for making pretzels, the same to be held and 342 enjoyed by the said Butler, Earhart and Company or the individuals composing said firm for their own use and behoof and for the use and behoof of their legal representatives to the full end of the term for which said letters patent are or may be granted, thus including any extension as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made, due regard being had to the provisions of an agreement entered into respecting the payment of moneys by and be-

tween ourselves and the said Butler, Earhart and Company; which agreement bears date and was executed the 31st day of December, 1878.

In testimony whereof we hereunto set our hands and affix our seals this tenth day of January, eighteen hundred and seventy-nine.

WILLIAM LAMPERT. [SEAL.]
HENRY HUBER. [SEAL.]

Sealed and delivered in presence of—
THEO. LAMPERT.
F. NEWMAN.

343 STATE OF OHIO, } ss:
County of Crawford, }

On the tenth day of January, in the year one thousand eight hundred and seventy-nine, before me personally came William Lampert and Henry Huber, to me well known to be the individuals described in and who executed the foregoing instrument, and acknowledged that they executed the same.

[Notarial Seal, Crawford Co., Ohio.]

FREDERICK NEWMAN,
Notary Public, Crawford County, Ohio.

Endorsed: Filed Feb. 4, 1886. Wm. H. Bradley, clerk.

Recorded Jan. 30, 1879.
Ex'd: H. M. H.; E. A. M.

344 "COMPLAINANTS' EXHIBIT 'C.' July 21, 1879. Gilbert H. Stewart, Notary Public."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of an instrument of writing executed by William Lampert and Henry Huber July 21, 1879, recorded in Liber I 24, page 315. Said record has been carefully compared with the original and is a correct transcript thereof.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed [SEAL.] this 27th day of March, in the year of our Lord one thousand eight hundred and eighty-four, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH,
Commissioner.

345 Liber I 24, p. 315.

Whereas we, William Lampert and Henry Huber, of Crestline, county of Crawford, and State of Ohio, did obtain letters patent of

the United States for certain improvements in "pretzel machines," which letters patent bear date of the 6th day of May, 1879, and are numbered 215,006 ·

And whereas we are now sole owners of all legal rights thereunder;

And whereas Theodore H. Butler, George W. Earhart, and William M. Crawford, of Columbus, county of Franklin, and State of Ohio, doing business under the firm name and style of Butler, Earhart & Co., are desirous of acquiring an interest therein:

Now, therefore, to all whom it may concern, be it known that for and consideration of one dollar to each of us in hand paid and in consideration of and according to the terms of a certain agreement between the parties hereto, which agreement is recorded in the records of transfers at the U. S. Patent Office, at Liber O 23, page 146, we have assigned, sold, and set over, and by these presents do assign, sell, and set over, unto the said Butler, Earhart & Co. the equal undivided one-half part of all the right, title, and interest in said invention and patent and any and all improvements now made or which hereafter may be made by us in or on said patented
346 machine or any machines of the same class or for the same purpose—

The same to be held and enjoyed by the said Butler, Earhart & Co. for their own use and behoof and for the use and behoof of their legal representatives to the full end and of the term for which said letters patent are or may be issued or granted, including any extension, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

In testimony whereof we hereunto set — hands and affix our seals this 21st day of July, 1879.

WILLIAM LAMPERT. [SEAL.]
HENRY HUBER. [SEAL.]

Sealed and delivered in presence of—
WILLIAM McCORMICK.
WILLIAM F. CROWE.

STATE OF OHIO, }
County of Crawford, } *ss:*

On the 21st day of July, in the year one thousand eight hundred and seventy-nine, before me personally came William Lampert and Henry Huber, to me well known to be the individuals described in and who executed the foregoing instrument, and acknowledged that they executed the same.

WILLIAM F. CROWE, *J. P.* [SEAL.]

Recorded Aug. 1, 1879.

Endorsed: Filed Feb. 4th, 1886. Wm. H. Bradley, clerk.

347 "COMPLAINANTS' EXHIBIT 'D.' July 21, 1879. Gilbert H. Stewart, Notary Public."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of an instrument of writing executed by William Lampert and Henry Huber July 21, 1879, recorded in Liber I 24, page 317. Said record has been carefully compared with the original and is a correct transcript thereof.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed
[SEAL.] this 27th day of March, in the year of our Lord one thousand eight hundred and eighty-four, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH,
Commissioner.

348 Liber I 24, p. 317.

To all whom these presents shall come, Greeting:

Be it known that we, William Lampert and Henry Huber, of Crestline, county of Crawford, and State of Ohio, patentees and sole owners of an undivided one-half interest in each of two certain letters patent of the United States, numbered respectively 184,786 and 215,006, and bearing date respectively November 28th, 1876, and May 6th, 1879, for certain new and useful improvements in "pretzel machines" or "bretzel machines," whereof Theodore H. Butler, George W. Earhart, and William M. Crawford, of Columbus, Ohio, doing business under the firm name and style of Butler, Earhart & Co., at Columbus aforesaid and elsewhere, are now owners of the remaining half interest, do hereby appoint, constitute, and create the said firm of Butler, Earhart and Co. our true, lawful, sole, and exclusive attorneys, with full and sole power to make assignments, grants, licenses, mortgages, contracts or agreements, or other instruments of any kind under said letters patent or either of them or under or relating to any improvements now made or which may hereafter be made by us upon machines for making pretzels or "bretzels," or other machines of the same class or for similar purposes, with full and sole power to sign our names to all such instruments, and in our names to receive and receipt for all considerations in exchange for any of such rights, licenses, or other privileges whatsoever the same as we (without that this exclusive power was executed) could do if personally present.

349 And we do hereby ratify and confirm all the acts and deeds which the said firm of Butler, Earhart & Co. may under this power of attorney lawfully perform, it being understood that this instrument is executed in conformity with the conditions of an

agreement by and between the said Butler, Earhart & Co. and ourselves, which instrument is recorded in the records of transfers at the United States Patent Office, at Liber O 23, page 146, and it being further understood and intended that this power of attorney shall remain and be in full force and effect so long as the conditions of the aforesaid agreement are maintained, granting hereby the aforementioned powers unto the said Butler, Earhart & Co. to the exclusion of ourselves as all other persons, thereby giving them, the said Butler, Earhart & Co., full and sole control of our interests in the said patents and improvements or inventions as contemplated by the aforementioned agreement.

Witness hands and seals this 21st day of July, 1879.

WILLIAM LAMPERT. [SEAL.]
HENRY HUBER. [SEAL.]

Witnesses:
WILLIAM McCORMICK.
WILLIAM F. CROWE.

350 STATE OF OHIO, }
County of Crawford, } ss:

On this 21st day of July, in the year 1879, before me personally came William Lampert and Henry Huber, well known to me to be the individuals mentioned in the foregoing instrument, and they severally acknowledged that they severally executed the same.

WILLIAM F. CROWE,
Justice of the Peace.

Recorded Aug. 1, 1879.
Ex'd: H. M. H.; E. A. M.

Endorsed: Filed Feb. 4th, 1886. Wm. H. Bradley, clerk.

351 "COMPLAINANTS' EXHIBIT 'E.' Nov. 20, 1882. Gilbert H. Stewart, Notary Public."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of an instrument of writing executed by Butler, Earhart and Company and William Lampert November 20, 1882, recorded in Liber R 28, page 415. Said record has been carefully compared with the original and is a correct transcript thereof.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be [SEAL.] affixed this 27th day of March, in the year of our Lord one thousand eight hundred and eighty-four, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH,
Commissioner.

352 Liber R 28, p. 415.

This agreement, made and entered into this 20th day of November, A. D. 1882, by and between William Lampert, of Crestline, Ohio, and Butler, Earhart & Co., of Columbus, Ohio, witnesseth:

1st. That this agreement relates to certain patents issued at Washington for improvements in machinery for manufacturing pretzels and jumbles, and is based upon a certain agreement made December 31st, 1878, by and between William Lampert and Henry Huber, as the party of the first part, and Butler, Earhart & Co., as the party of the second part, and upon assignments and the power of attorney made and executed under it, by which instruments the said William Lampert and Henry Huber assign and convey to the said Butler, Earhart & Co. one-half of all their interest, right, and title in a certain patent issued at Washington to them, as inventors, for improvement in machinery for making pretzels or jumbles (which patent is dated November 28th, A. D. 1876, and numbered 184,786), as well as one-half of all their right, title, and interest in any and all further improvements that had been or might be made by said Lampert or Huber in said pretzel or jumble machine or in any renewal or reissue of the said patent or patents:

2d. Now, therefore, it being represented and understood that the said William Lampert is now owner in his own right of one-
353 quarter (¼) interest in said letters patent of the U. S., and that he owns the same interest in two patents of the United States issued subsequently, one of which was issued *was issued* to the said William Lampert and Henry Huber for improvement in pretzel or jumble machines, and numbered 215,006 and dated May 6th, A. D. 1879, and the other was issued to said William Lampert and Henry Huber, as inventors, and to Butler, Earhart & Co., as assignees of one-half interest therein, which patent was also issued for improvement in said machinery and is dated February 10th, A. D. 1880, and numbered 224,446; and the said William Lampert, being now desirious of disposing of all of his interest now held and owned by him in all of said patents, as well as all of his right, title, and interest in every and all pretzel or jumble machines built and operated under any or all of said letters patent, does hereby agree to sell, convey, and assign to said Butler, Earhart & Co., of Columbus, O., all of his right, title, and interest in said patents and machines for the sum of two thousand dollars, which amount is to be divided and paid to the said William Lampert by Butler, Earhart & Co. in the following sums, to wit: Five hundred dollars upon the execution by the said William Lampert to the said Butler, Earhart & Co. of a proper deed of assignment of all his interest in said patents and machines as above stated, and the balance of said sum is to be divided
354 into three equal payments, payable in six, twelve, and eighteen months from the date and execution of said deed of assignment, which deferred payments shall be evidenced by notes properly made, signed, and delivered by said Butler, Earhart & Co. to said William Lampert upon the execution and delivery of said deed of assignment as above stated.

3d. It is further understood and agreed that for and in consideration of the above sums of money to be paid by Butler, Earhart & Co. to said William Lampert that the said William Lampert shall also convey and assign to said Butler, Earhart & Co. all of his right, title, and interest in certain letters patent for improvement in pretzel and jumble machines issued at Altona, in and for the Dominion of Canada, numbered 15241 and dated August 7th, 1882, and issued to William Lampert and Henry Huber as inventors, and to Butler, Earhart & Co. as assignees of one-half interest therein, as well as all of his right, title, and interest which may appear in his name or right in and to any or all other letters patent which may be obtained in said Dominion of Canada or in any other foreign country, or any extension or reissue of same in which applications for patents for improvement in said pretzel or jumble machines which will necessarily have to be made in his name as inventor in whole or in part the deed of assignment for said interest in the aforesaid Canadian patent shall also be made by said Wm.
355 Lampert to said Butler, Earhart & Co. on or before the payment of the sum of money and execution of the notes mentioned in paragraph two (2) of this agreement.

4th. The said Butler, Earhart & Co. further agree with the said Wm. Lampert that in addition to the sum mentioned in paragraph two (2) of this agreement to be paid him for his interest in said patents and machines that they will assume and pay a certain claim held by Henry Huber against said William Lampert, amounting to the sum of two hundred and fifty (250.00) dollars, said claim being in the form of an order drawn by said Lampert upon Butler, Earhart & Co. and in favor of Henry Huber for the above-named sum, to be paid by said Butler, Earhart & Co. to said Henry Huber out of the first net earning that should accrue to said Lampert's interest in said patents and machines.

BUTLER, EARHART & CO. [L. S.]
WM. LAMPERT. [L. S.]

Witness:
CHAS. R. THOMPSON.
P. W. POOLE.

Recorded Dec. 8, 1882.
Exd: H. M. H.; E. A. M.

Endorsed: Filed Feb. 4, 1886. W. H. Bradley, cl'k.

356 "COMPLAINANTS' EXHIBIT 'F.' Jan. 31, 1883. Gilbert H. Stewart, Notary Public."

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come, Greeting:

This is to certify that the annexed is a true copy from the records of this office of an instrument of writing executed by William Lam-

pert January 31, 1883, recorded in Liber P 29, page 144. Said record has been carefully compared with the original and is a correct transcript thereof.

In testimony whereof I, Benj. Butterworth, Commissioner of Patents, have caused the seal of the Patent Office to be affixed
[SEAL.] this 27th day of March, in the year of our Lord one thousand eight hundred and eighty-four, and of the Independence of the United States the one hundred and eighth.

BENJ. BUTTERWORTH,
Commissioner.

357 Liber P 29, p. 144.

This indenture, made this 31st day of January, A. D. 1883, between William Lampert, of Crestline, in the county of Crawford and State of Ohio, of the first part, and Theodore H. Butler, George W. Earhart, and William M. Crawford, doing business as Butler, Earhart and Co., of Columbus, Ohio, parties of the second part.

Whereas, by articles of agreement dated December 31, 1878, recorded January 11, 1879, Liber O 23, page 146, the party of the first part and Henry Huber, as joint inventors, agreed to assign to the parties of the second part an undivided one-half of all their interest in letters patent No. 184,786, dated November 28, 1876, and any improvement or improvements thereon; also to give them full control of all sales of rights, territory, machines and the collection of all royalties; also power of attorney to act for said joint inventors in all transactions connected with said patent and improvements thereon, as will more fully and at large appear by reference to the record as given above of said agreement;

And whereas said Lampert and Huber did assign the undivided one-half of all their right as secured to them by letters patent of November 28, 1876, No. 184,786; also all improvements upon said patent or any machine for making bretzels to the full end of the term for which said patent was granted, as will more fully
358 and at large appear by reference to the record of said assignment, which was filed January 10, 1879, recorded January 30, 1879, in Liber K 23, page 438, to the parties hereto of the second part;

And whereas said joint inventors, by assignment dated July 21, 1879, recorded August 1, 1879, Liber I 24, page 315, assigned the undivided one-half part of all their right, title, and interest in the invention as secured to them by patent of May 6, 1879, No. 215,006, together with any and all improvements now made or which may hereafter be made on said machine or any machine of the same class for the same purpose, to the parties hereto of the second part;

And whereas said joint inventors, by an instrument in writing dated July 21, 1879, recorded August 1, 1879, in Liber I 24, page 317, appointed said parties hereto of the second part their exclusive attorneys, with full power to make assignments, grants, licenses, contracts, etc., under patents of November 28, 1876, No. 184,785; May

6, 1879, before referred to, and of any improvements which he has made or may hereafter make on machines for making bretzels:

Now, therefore, this indenture witnesseth that the said party of the first part, for and in consideration of the sum of five dollars, current money of the United States, to him in hand paid by the
359 said parties of the second part, the receipt of which before the ensealing and delivery of these presents is hereby acknowledged, *have* assigned, sold, and set over, and do- hereby assign, sell, and set over, unto the said parties of the second part the undivided one-fourth interest, such being the interest which he now holds, in letters patent, dated Nov. 28, 1876, No. 184,786; May 6, 1879, No. 215,006, and February 10, 1880, No. 224,446, and Canadian patent, dated August 7, 1882, No. 15241, together with all improvements which he has made or may hereafter make on said patents or on machinery for making bretzels, either as joint or sole inventor; and, further, that he, the said party of the first part, and his heirs shall and will, at any and all times hereafter, upon the request and at the cost of the said parties of the second part, their heirs or assigns, make, execute, deliver, and acknowledge any papers which may be necessary for the reissue of either of said patents and all such other deeds or other assurance in law for the more certain and effectual conveyance of the said patents and improvements thereon or other inventions for the same purpose unto the said parties of the second part, their heirs or assigns, as the said parties of the second part, their heirs or assigns, or their counsel learned in the law shall advise, desire, or require.

In testimony whereof the said party of the first part has
360 hereunto set his hand and seal on the day and year first hereinbefore written.

WM. LAMPERT. [SEAL.]

Signed, sealed, and delivered in presence of—
I. W. LARKWORTHY.
G. W. EMERSON.

STATE OF OHIO, } *ss:*
County of Crawford, }

On the 31st day of January, A. D. 1883, before me, a notary public in and for Crawford Co., State of Ohio, came personally William Lampert, to me well known to be the individual described in and who executed the foregoing instrument, and acknowledged that he executed the same.

[Notarial Seal, Crawford Co., O.]

G. W. EMERSON,
Notary Public.

Recorded Mar. 19th, 1883.
Ex'd: E. A. M.; H. M. H.

Endorsed: Filed Feb. 4, 1886. W. H. Bradley, cl'k.

(Here follow diagrams marked pp. 361 to 382, incl.)

Complainants Exhibit March 1881. copy Gilbert H. Stewart Notary Public

Fig 1

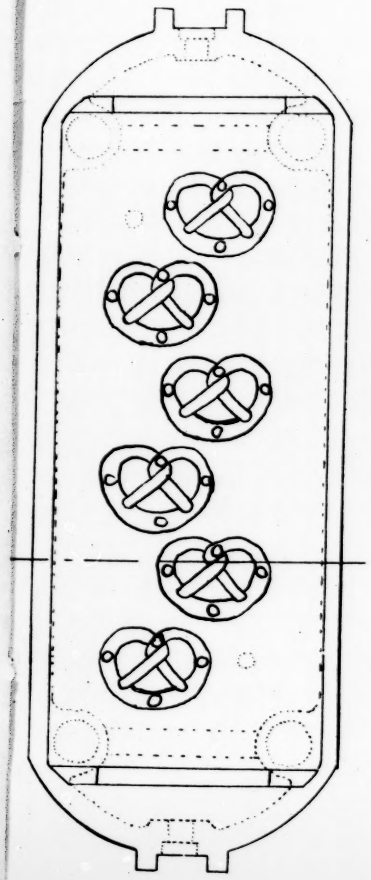
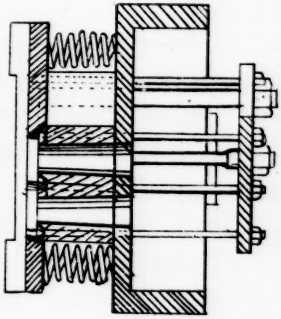
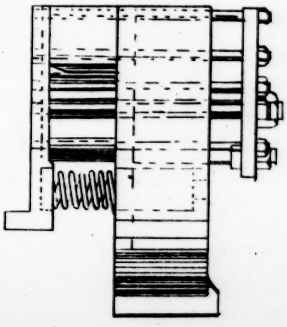


Fig 2

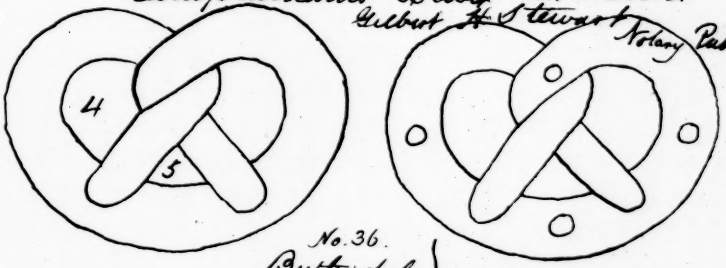


No. 36.
Butler et al.
v
Steckel et al.
} p. 361

Fig 3

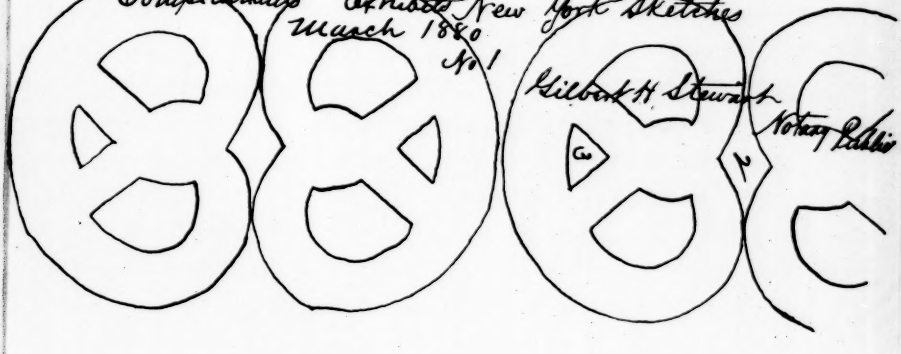


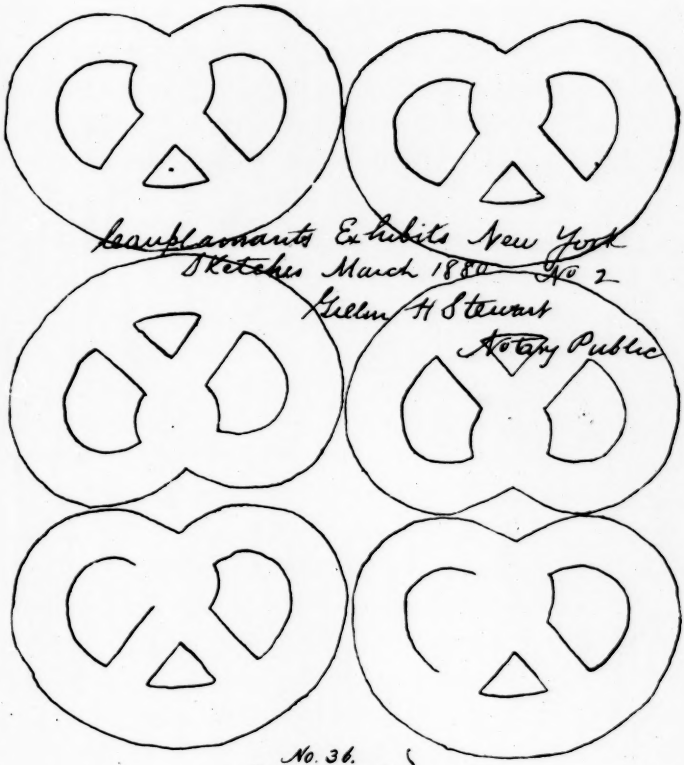
Complainants Exhibit First Sketch
Gilbert H. Stewart Notary Public



No. 36.
Butler et al.
v.
Steckel et al.
p. 362

Complainants Exhibits New York Sketches
March 1880
No 1
Gilbert H. Stewart Notary Public



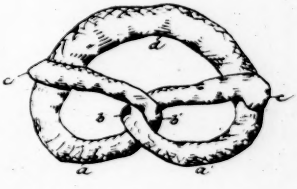


Complainants Exhibits New York
Sketches March 1880 No 2
Guelon H Stewart
Notary Public

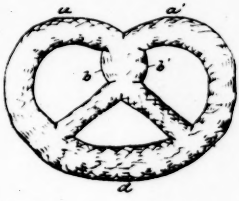
No. 36.
Butler et al.
v.
Steckel et al.
} p. 363.

Top plan, Complainants bretzel

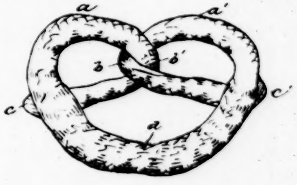
Top plan hand made bretzel



Bottom plan, Complainants bretzel.



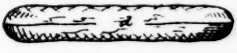
Bottom plan, hand made bretzel



Front view of bretzel

Front view of bretzel

Rear view of bretzel



Rear view of bretzel

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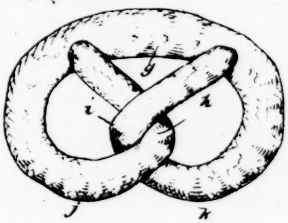
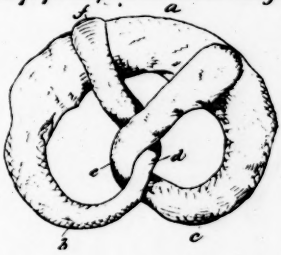
" Steckel et al }

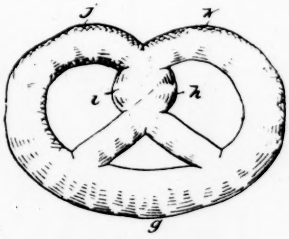
Top plan, Compluinants Bretzel



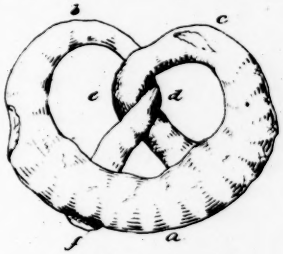
Top plan, hand made bretzel



Bottom plan, Complainants bretzel



Bottom plan, hand made bretzel



Front view, bretzel

Front view, bretzel

Side view, bretzel

Side view of bretzel

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Top plan, Complainants bretzel

Top plan, hand made bretzel

Bottom plan of bretzel

Bottom plan, bretzel

Front view of bretzel

Front view of bretzel

Rear view of bretzel

Rear view of bretzel

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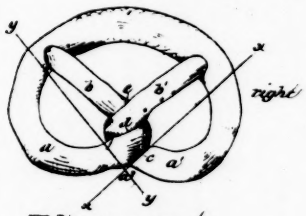
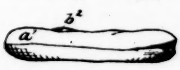
Plan view, Complainant's Bretzel



Edge view, front

View, right edge

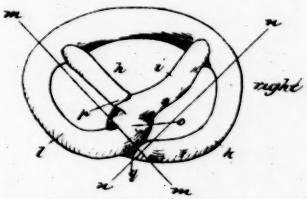


View, left edge

Section on line x x

Section on line y y

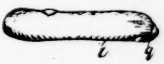
Plan view, Hand made Bretzel



Edge view, front

View, right edge

View, left edge



Section on line n n

Section on line m m

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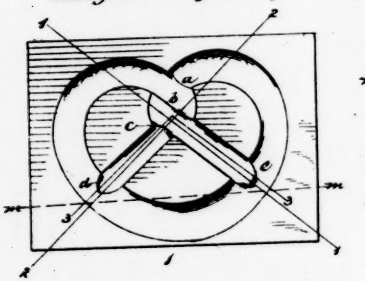
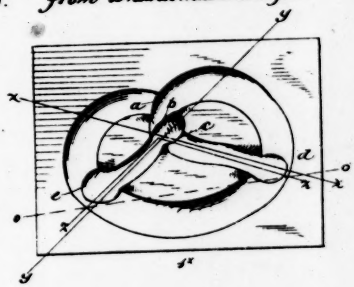
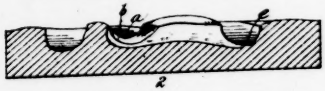
Plan view of a Plaster Cast made from a Bretzel. Complainants.



Plan view of a Plaster Cast made from a hand made bretzel.



Section of cast on line 1 1.

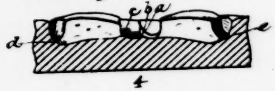


Section of cast on line x x

Section of cast on line 2 2.

Section of cast on line y y

Section on line 3 3 looking inward from dotted line m m



Section on line x x looking inward from dotted line o o

— Note —
Opposite sections of the above cuts, are made upon lines having the same direction as 1 1 — x x etc

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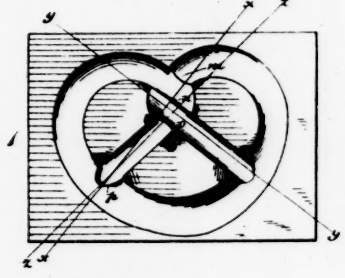
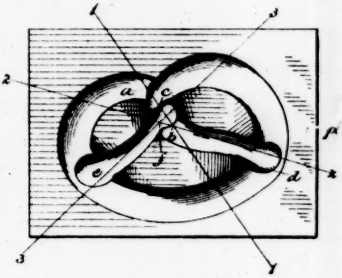
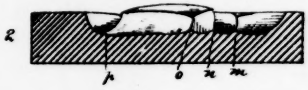
Plan view Plaster Cast of Bretzel — Complainants



Plan view of Plaster Cast of Bretzel — Hand made



Section of cast on line x x.



Section of cast on line 1 1

Section of cast on line y y.

Section of cast on line 2 2.

Section of cast on line 7 7.

Section of cast on line 3 3.

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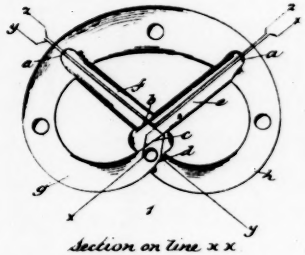
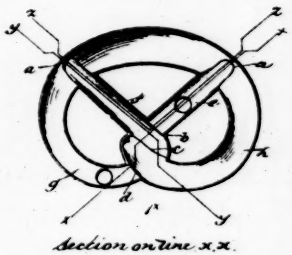
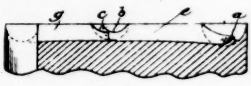
Plan view of brass cutter
Complainants breizel



Plan view of wood cutter
Hand made breizel.



Section on line x x

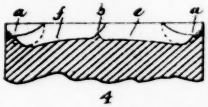


Section on line x x.

Section on line y y

Section on line y y

Section on line z z



Section on line z z.

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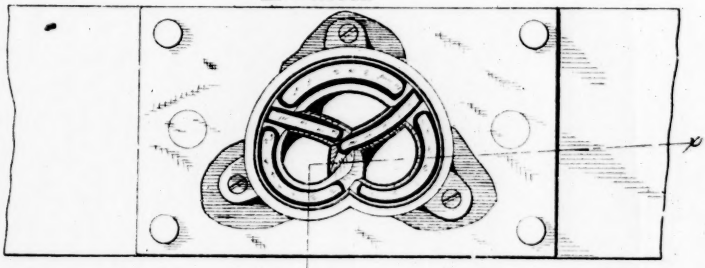
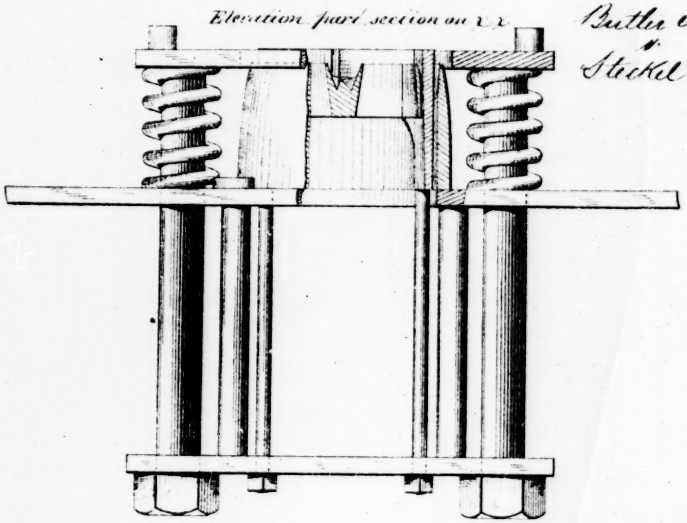
Complainant's Exhibit "A".

Plan



Elevation part section on x x



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Butler et al.
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Stickel et al.
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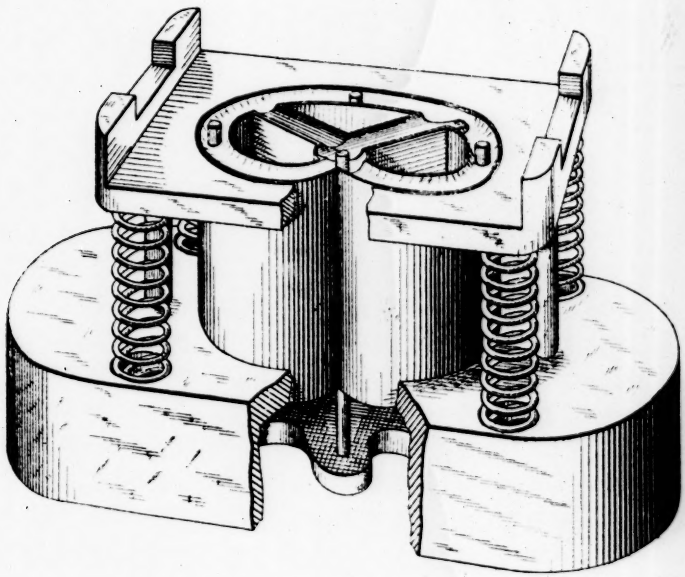
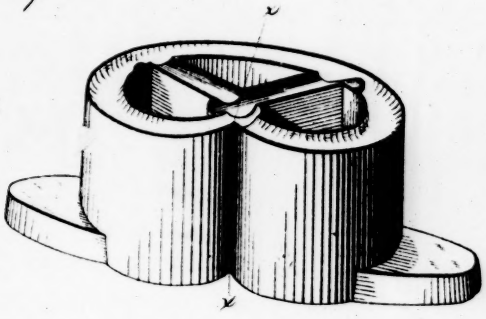
Complainants Exhibit
March 1882
Gilbert H. Steward,
Notary Public.

No 36.
Butler et al.
v.
Steckel et al
} p. 372

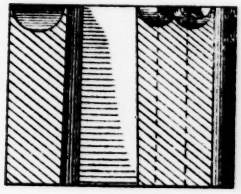


—— Complainants Exhibit ——
—— Brass Cutter ——
—— Gilbert H. Stewart ——
—— Notary Public ——

No 36.
Butler et al.
v.
Steckl Md.
} p. 373

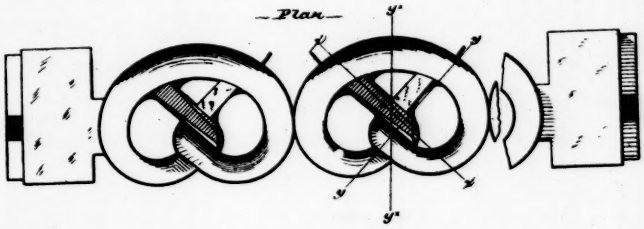


Section on line x x



Complainants Exhibit
— New York Machine —
Gilbert H. Blewart Notary Public

— Plan —



— Section on x x —

— End Elevation —

— Section on y y —

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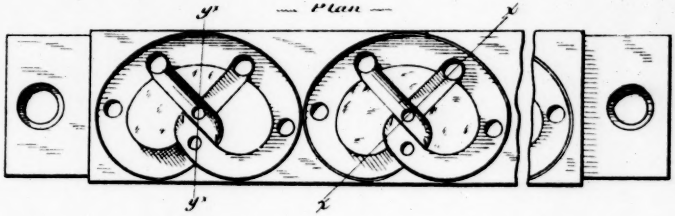
p. 374

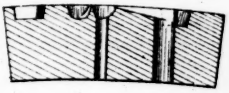
Complainants Exhibit
— New York Machine —
Gilbert H Steward Notary Public

— Plan —



— End View —

— Section on y x —



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Butler et al.
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Steckel et al.
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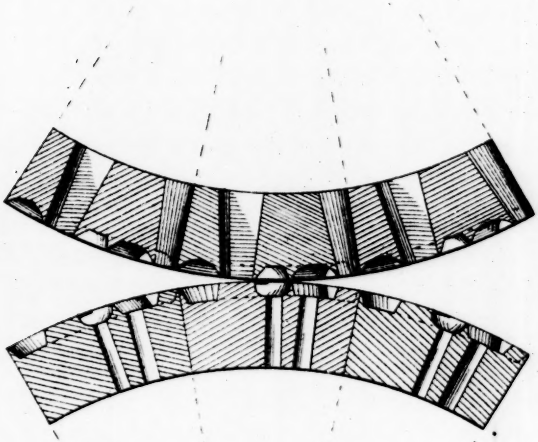
Cylinders formed of sections —
— on line y. y. New York Machine —



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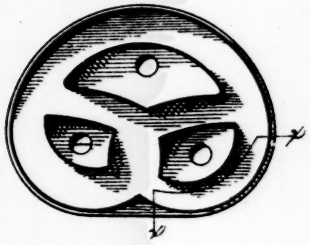
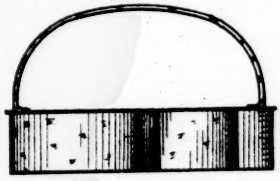
Butler et al.
&
Steckel et al
} p. 376.

— Butler Barhard & Co —
— vs —
— Steckel Bros —
— Defendant's Exhibit, No. 1 —

— Bottom plan view —



— Elevation, part section on line X X —



No. 36.
Butler et al.
v.
Steckel et al.
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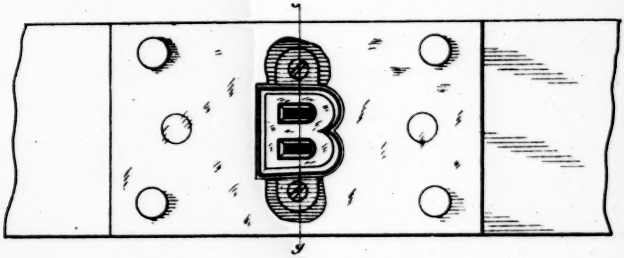
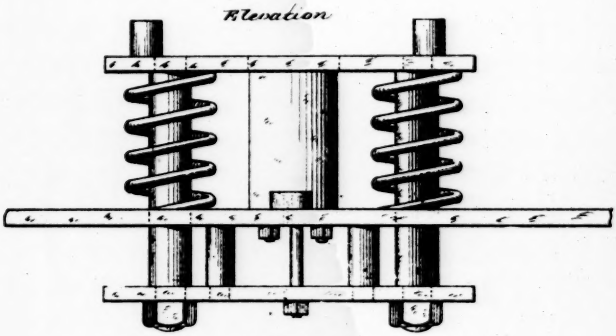
Defendants Exhibit No 14

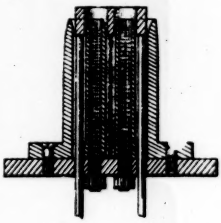
Plan



Elevation



Section on y y



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Buttler et al.
v.
Stickel et al.
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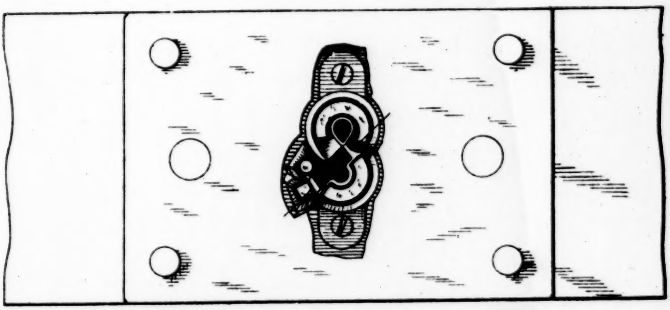
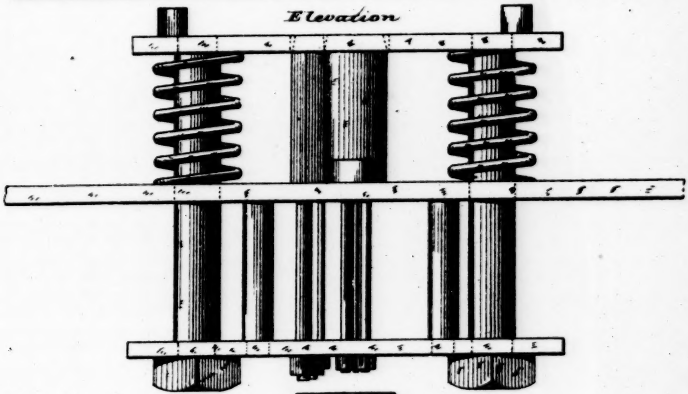
Defendant's Exhibit No 15

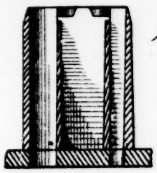
Plan View



Elevation



Section



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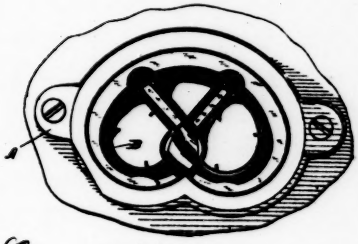
Battu et al.
v.
Steckel et al.
} No. 379

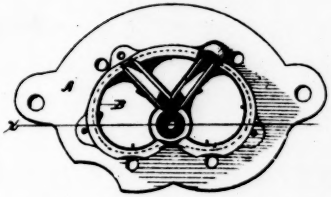
Defendants Exhibit #7

No 36.
Butler et al.
v.
Steckel et al
} f. 380

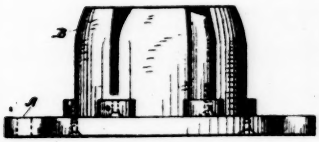
Plan View



Detail View

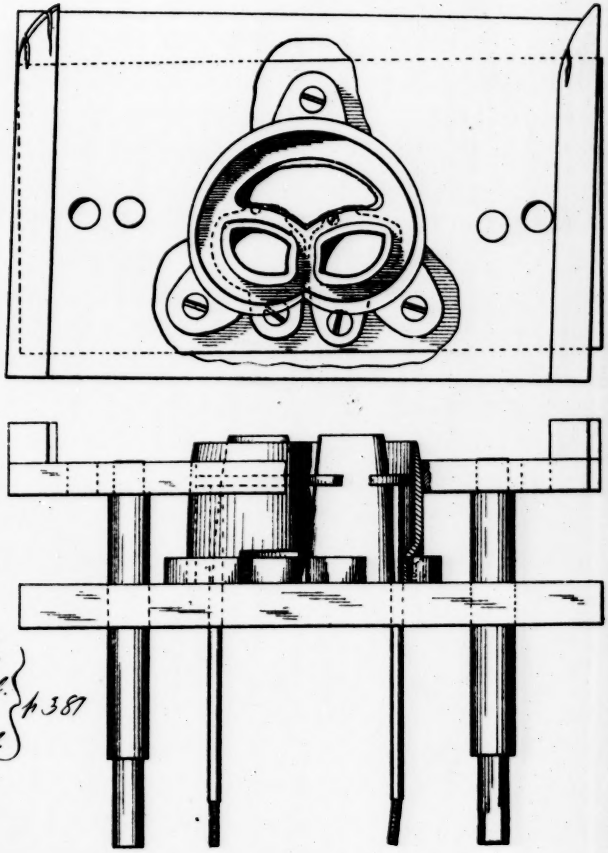


Detail Elevation



Detail Section

Marvin & Co's Brevier Cutter. Wood Frame.
Defendants Exhibit No. 8.



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Butterworth
v.
Hackley et al.
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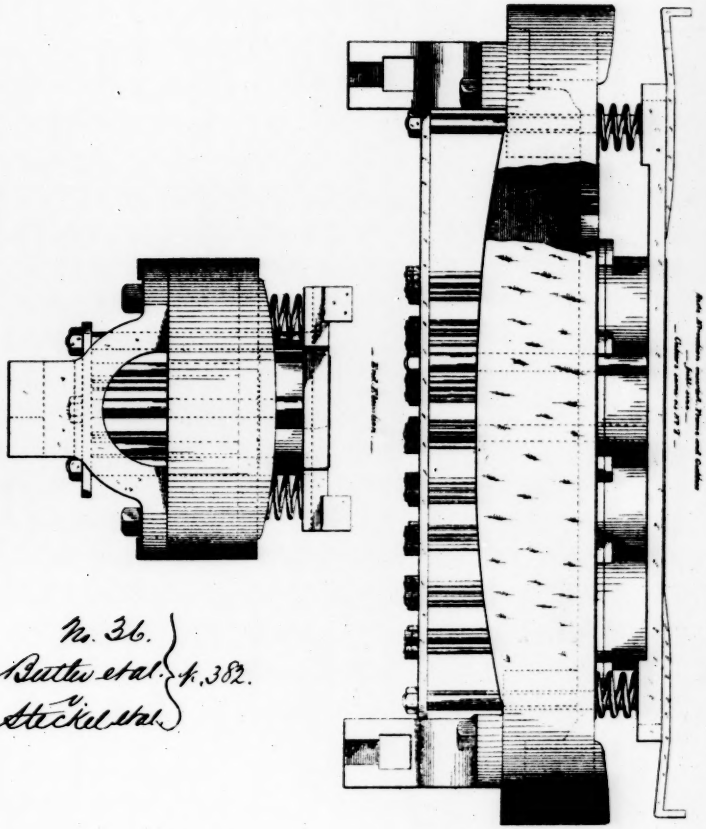


No. 36.
Butler et al. } v. 382.
Stickel et al.

W. LAMPERT & H. HUBER.

PRETZEL MACHINE.

No. 184,786. Patented Nov. 28, 1876.

No. 36.
Bittenbinder et al. } p. 383
Steckel et al.

Fig. 1

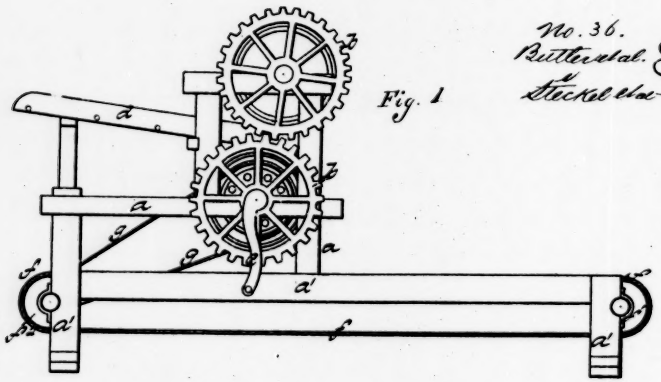


Fig. 2

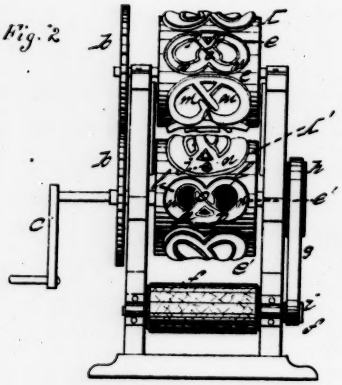
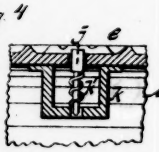


Fig. 3

Fig. 4



WITNESSES

Thomas Bernard
J. Fred. Acker.

William Lampert
Henry Huber
INVENTORS

Edwd Brooks
ATTORNEYS

384 UNITED STATES PATENT OFFICE.

WILLIAM LAMPERT and HENRY HUBER, of Crestline, Ohio.

Improvement in Pretzel-Machines.

Specification forming part of Letters Patent No. 184,786, dated November 28, 1876; application filed April 29, 1876.

To all whom it may concern:

Be it known that we, William Lampert and Henry Huber, of Crestline, in the county of Crawford and State of Ohio, have invented certain new and useful improvements in machines for making pretzels; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings—

(Here follows diagram marked page 383.)

—and to letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a side elevation of our improved pretzel-making machine. Fig. 2 is an end elevation; and Figs. 3 and 4, detached sectional views thereof.

Corresponding parts in the several figures are designated by like letters.

This invention relates to a certain improvement in pretzel-machines; and it consists of two or more cylinders, disposed one above the other, and having cutters or dies of a pretzel shape, and one having certain portions of its surface in relief or raised, and the other certain portions perforated or supplied with openings, substantially as hereinafter more fully set forth.

In the annexed drawings, A A′ refer to two cylinders, mounted one above the other upon a frame, *a a*, supported upon a second frame, *a′ a′*. Upon the extended portions of the axes of the cylinders A A′ are toothed or cogged wheels *b b*, gearing with each other, and for imparting joint motion to said cylinders.

The machine may be run by hand by grasping and turning the handle *c* upon the axis of one of the cylinders A A′, or by other means or motor.

d is a trough, suitably secured in position for feeding the dough from which the pretzels are to be made to the cylinders. Upon the peripheries of the cylinders are cutters or dies *e e′*, of the shape of a pretzel, substantially as shown in Fig. 2, to give the desired shape to the dough passing between them, and which, after receiving the impression of, and being cut by, the said cutters or dies, falls upon the delivering apron or belt *f*, upon pulleys or drums f^1 f^2 in the frame *a′ a′*.

Motion is imparted to the apron or belt *f* by a belt, *g*, passing ound a pulley, *h*, upon the axis of one of the cylinders A A′ and

a pulley, *i*, upon the axis of the drum or pulley f^2 of the delivering-apron *f*.

To expel the pretzel or pretzels from the dies or cutters *e e'* of the lower cylinder, which receives the dough, a short projection or stud, *j*, is supplied to each of said dies or cutters *e e'*, and extended inwardly therefrom within a receptacle, *k*, and possessed of a spring, *k'*, by which it is projected after the compression of the said spring, to produce the result above stated.

The dies or cutters *e e'* of the lower cylinder may have their blank portions left open or perforated, as shown at *l l*, to allow the scraps or surplus dough, in part, to drop into the cylinder, and the corresponding surfaces or portions of the dies or cutters *e e'* upon the upper cylinder projected beyond the face of the same, as shown at *m m*, to force the surplus dough or scraps through the openings *l l* of the dies or cutters of the lower cylinder.

A duplication of the stud or projection *j* and spring *k'* may be applied to each of the cutters or dies of the upper cylinder to expel the pretzels therefrom.

The pretzel-shaped cutters or dies consist of the heart-shaped or circular grooves *n*, with their walls in relief upon the periphery of the cylinders. The converging portions of the grooves *n* are twisted, as at *o*, in the center of their circular or heart-shaped portion, and carried and united to the latter, as at *p p*.

Having thus described our invention, what we claim, and desire to secure by letters patent, is—

The cylinders A A', disposed one above the other, and having the cutters or dies *e e'* of a pretzel shape, with the projections or raised surfaces *m m* and openings *l l*, substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we hereunto affix our signatures in presence of two witnesses.

WILLIAM LAMPERT.
HENRY HUBER.

Witnesses:
B. F. MILLER.
DAN. BABST, JR.

386 UNITED STATES PATENT OFFICE.

WILLIAM LAMPERT and HENRY HUBER, of Crestline, assignors of one-half of their right to Butler, Earhart & Co., of Columbus, Ohio.

Bretzel-Machine.

Specification forming part of Letters Patent No. 224,446, dated February 10, 1880; application filed March 3, 1879.

To all whom it may concern:

Be it known that we, William Lampert and Henry Huber, of Crestline, in the county of Crawford and State of Ohio, have invented certain new and useful improvements in bretzel-machine

W. LAMPERT & H. HUBER.

Bretzel-Machine.

No. 224,446. Patented Feb. 10, 1880.

Fig. 1.

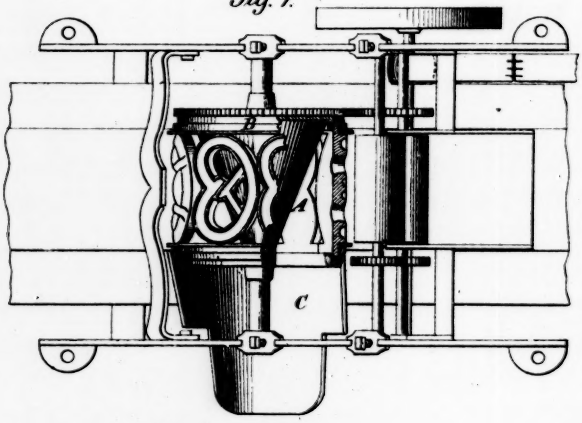
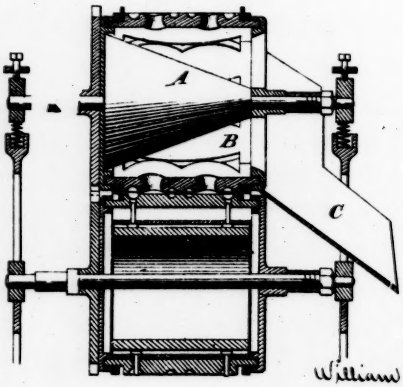


Fig. 2.



No. 36
Butler et al.
v.
Steckel et al.
p. 385

Witnesses.
A. Ruppert,
J. H. Lange.

William Lampert,
Henry Huber.
Inventors.
per Edson Brothers
Attorneys.

and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings—

(Here follows diagram marked p. 385.)

—and to letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a plan view, partially in section, of our improvement in bretzel-machines; and Fig. 2 is a vertical section of the same.

Corresponding parts in the two figures are denoted by like letters.

This invention relates to certain improvements in bretzel or jumble machines, the object of which is to provide for the discharging to one side of the scraps of dough resulting from the formation of the bretzel or jumble; and it consists in the arrangement or employment, within one of the bretzel or jumble die cylinders, of a cone, substantially as hereinafter more fully set forth.

In the accompany drawings is illustrated a machine adapted for making bretzels or jumbles, consisting, essentially, of two cylinders or dies, arranged to revolve one with its periphery in contact with that of the other, and a delivering-apron. The dough is fed to and passed between these dies or cylinders from a dough-feeding trough and between two rollers adapted to control the thickness of the feeding of the dough, all of which is fully set forth in connection with a former invention for which application for letters patent has been made by us.

A marks a cone, arranged or located within the upper cylinder, B, one side of which is left open, the tapering end of which cone is disposed at the open side or end of the said cylinder, obviously to discharge the falling scraps of dough resulting from the formation of the jumble or bretzel between the dies of the two cylinders to one side of the machine.

C is a spout or chute, fastened to the supporting-frame of the cylinders or dies, with its elevated or upper end resting or arranged at the open end or side of the cylinder B. The scraps discharged by the cone A will fall upon the spout C, which will in turn deliver said scraps into a suitable receptacle, to be utilized, if desired.

This invention, in addition to being exceedingly simple and cheap, is also very convenient and desirable, and obviates the interference of the scraps with the working, or prevents the clogging of the machine, or rather its cylinders.

Having thus fully described our invention, we claim and desire to secure by letters patent—

1. In a jumble or bretzel machine, one of its cylinders or dies provided with a cone for discharging to one side scraps of dough resulting from the formation of the bretzel or jumble, substantially as specified.

2. The combination, with cylinder B of a bretzel or jumble machine, of the internal cone A, with its smaller end disposed at the open side or end of said cylinder, substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

WM. LAMBERT.
HENRY HUBER.

Witnesses:
AUGUST SCHOBER.
JESSE WILLIAMS.

388 UNITED STATES PATENT OFFICE.

JEREMIAH WEBSTER, of Charlestown, Massachusetts.

Improvement in Cake-Cutters.

Specification forming part of Letters Patent No. 139,217, dated May 20, 1873; application filed March 26, 1873.

To all whom it may concern:

Be it known that I, Jeremiah Webster, of Charlestown, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful improvement in the cutting of snaps or other cakes, and in the cutters and tables therefor; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying plate of drawing.

The purpose of this invention is to decrease the labor of cutting snaps or other cakes from a sheet of dough, and of transferring them to pans or plates to be placed in the baking-oven, and also to insure the rolling of the dough into a sheet of even thickness throughout; and the invention consists of a novel construction of a table or bed on which to roll the dough into sheets, &c., as fully hereinafter described.

In the accompanying plate of drawing—

(Here follows diagram marked p. 387.)

my invention is illustrated, figure 1 being a face view of the cutting-plate; Fig. 2, a cross-section in plane of line *x x*, Fig. 1, showing the cutting-plate as upon the table or bed whereon the dough is rolled, this table being also in vertical cross-section, and the cutting-plate covered by a baking pan or plate; and Fig. 3, cross-section in plane of line *y y*.

A in the drawing represents a cake-cutting plate, made, by preference, of metal, and provided with cutting-flanges *a*, projecting from one face or side. The cutting-flanges *a* are shown in various outlines or figures (see Fig. 1), as, for instance, round, oval, heart-shaped, triangular, and within such figures, made by the cutting-flanges *a*, the plate is open, corresponding to the interior periphery of the figure, which interior periphery is larger at the surface *c* of the plate than at the cutting-edge of the flanges *a*, tapering between such planes; *d*, small holes through thickness of plate A, at various points thereof, as shown; D, a table or bed on which to roll dough

387

J. WEBSTER.

Cake-Cutters.

No. 139,217. Patented May 20, 1873.

Fig 1

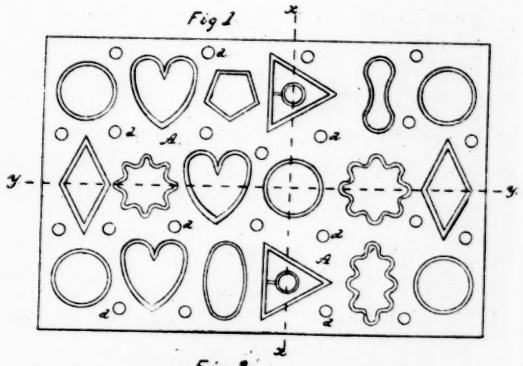
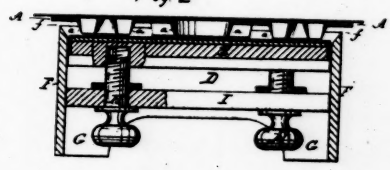
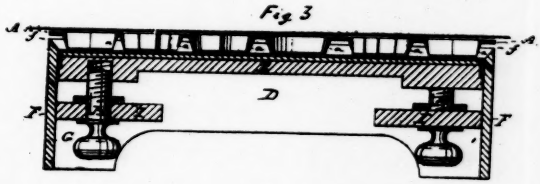


Fig 2



No. 36. Butler et al. v. Steckel et al. } p. 387

Fig 3



WITNESSES.

John P. McGlory

C. A. Teasdale

INVENTOR.

J. Webster.

per Brown Brothers

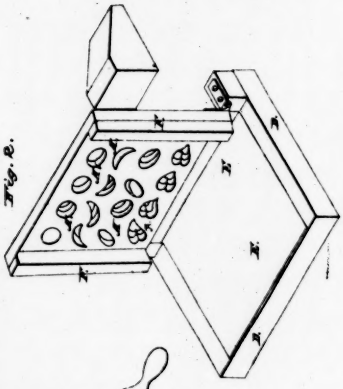
Attorneys

The Specification in this Case has never been printed.

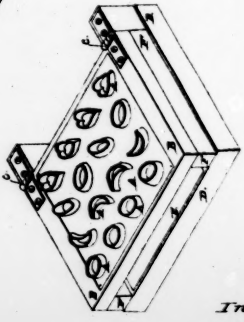
J. H. Shrote,

Cake Cutter,

No. 25,767. Patented Oct. 11, 1859.



No. 36. Butterfield et al. v. Stockel et al. } p. 384



Witnesses:
Jas. C. Clayton
J. G. Clayton

Inventor
John H. Sh

This table or bed is constructed of a platen, E, having legs G and thumb-screws H under the platen E, and applied to the cross-pieces I of the frame F, and to the under side of platen E, as shown, so that turning them in the one by direction the platen E can be raised, and in the other direction lowered, enabling thereby the platen E to be set at any height with reference to the upper edge *f* of the frame F, according as may be desired in the use of the table to have the dough rolled thereon of a greater or lesser thickness, which, as is obvious, will be regulated by the distance which the platen E is below the upper edge of the frame.

Having rolled the dough, the cutting-plate is then placed on it, as shown, cutting the sheet into cakes corresponding in form to the outlines of the cutting-edges, when place the baking pan or plate on the cutting-plate, and together, the three parts as one, overturn the whole and raise the table and cake-cutter, which will leave the cakes upon the baking-pan, they escaping from the cutting-openings in consequence of their inner taper. The holes *d* allow the air to freely escape as the cutting-plate A is forced down to cut the sheet of dough, and prevent an air-cushion being formed between the dough and under side of cutting-plate, and also facilitate the detachment from the cutting-plate of those parts of the dough-sheet between the cakes cut out, as described. The platen-top has a rubber surface, covered with cloth, the purpose being to prevent the dulling of the cutting-flanges to the cutting-plate A; but this covering of rubber is not otherwise essential.

Having thus described my invention, what I claim, and desire to secure by letters patent, is—

The combination with the cutting-plate of the table D, composed of a platen, E, arranged within a frame, to be adjusted substantially as described, for the purpose specified.

The above specification of my invention signed by me this 17th day of February, A. D. 1873.

J. WEBSTER.

Witnesses:
EDWIN W. BROWN.
JOHN P. McELROY.

Here follows diagram marked p. 389.

391 UNITED STATES PATENT OFFICE.

HENRY ERZINGER, of Amana, Iowa.

Improvement in Cake-Cutters.

Specification forming part of Letters Patent No. 190,018, dated April 24, 1877; application filed March 1, 1877.

To all whom it may concern:

Be it known that I, Henry Erzinger, of Amana, in the county of Iowa and State of Iowa, have invented certain new and useful im-

provements in cake-cutters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in cake-cutters, and is designed to furnish means whereby the process of shaping by hand each individual form of cutter is changed, so that any number of duplicates can be formed from a single pattern.

(Here follows diagram marked p. 390.)

Referring to the drawings, figure 1 represents a cutter with its pattern secured to its inner face, while its opposite outer surface is closely secured to the supporting-block. Fig. 2 shows, in perspective, the several parts disconnected. Fig. 3 represents the cutter with a handle attached to its upper face, and the cake-ejecting device attached to its working-face. Fig. 4 is a bottom-plan view of the same. Fig. 5 shows the combined tool used in soldering the cutting-edge rim to the main plate of the cutter, and also to withdraw the pattern from the cutter after the said soldering.

A is any block of suitable size and material, which I call my "supporting-block," and is provided with a central bolt, *a*, at right angles to its supporting-surface, which is screw-tapped to correspond with the nut *b*. A blank piece of tin, B, of proper dimensions, serves as the main plate of the cutter, and is punctured, so that it may be placed over the central bolt *a*, and be seated directly upon the supporting-block. The pattern C, also having a central slot, *c*, is then laid upon the blank plate B, and is secured from displacement thereon by the bolt *a*, passing up through both plate and the pattern, and the two bound together by means of the nut *b*, clamping them closely to the supporting-block. A narrow strip of tin, D, which is to constitute the edge or cutting-rim, is then laid on the main plate B at right angles to its exposed face, and soldered thereto as it is bent or curved to follow the outline of the forming-pattern C. This strip D is of such width as to correspond with the depth of the cake to be cut, and by being pressed closely against the forming-edge of the pattern it is made of shape and contour the exact duplicate of the pattern. As each part of the strip D is forced against the pattern, and the desired form thus imparted thereto, it is soldered to the main plate, and thus firmly secured until the entire strip is secured, and constitutes a continuous piece in itself; the nut *b* is then unclamped; the cutter thus formed, and still retaining its forming-pattern in the design-bed made by the cutting-edge strip D, is removed from the supporting-block. The pattern is then itself removed from the cutter, preferably by introducing a hooked tool into the slot *c*, formerly engaging with the bolt *a*.

A bearing-edge, *c'*, on the under surface of the pattern, prevents it from being seated in continuous close contact upon the plate B, and also raises it sufficiently from the latter to allow of a hooked tool being inserted between the two, and thus separate them entirely.

H. ERZINGER.

CAKE-CUTTER.

No. 190,018. Patented April 24, 1877.

370

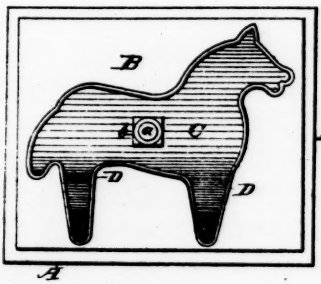


Fig. 1.

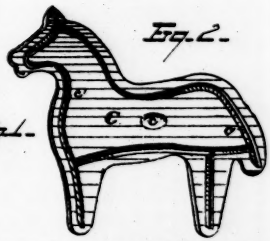


Fig. 2.

No 36
Buttons &
Buckles &c.
X 390

Fig. 3.

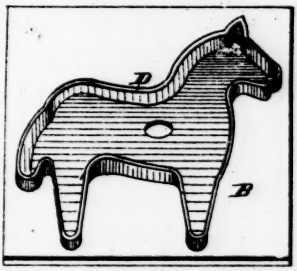
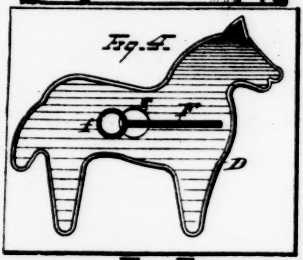


Fig. 4.



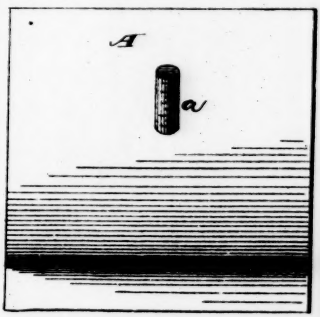


Fig. 5.

WITNESSES

Chas. L. Nottingham

A. M. Bright.

INVENTOR

Henry Erzinger.

By H. A. Seymour.

ATTORNEY

The drawing shows the forming-pattern and the cutter made therefrom as representing in outline the form of a miniature horse; but this special form is only given as an illustration of the principle of my invention, and the latter includes any form or design of pattern, or of cutting-edge. Thus I may substitute the forming outline of any animal, bird, game, fish, miniature men and women, and even any article, such as a boot, a pipe, &c. Representations of leaves, plants, and, in brief, any design, may be used.

In Fig. 5 I show a combined tool which I preferably use in making my cutters, though it is apparent that it is not necessary to my invention, as any other suitable mechanism may be used instead. It consists of a handle, H, provided with a soldering edge, *h*, which is well adapted to solder the strip D to its main plate B, and also having a hook, J, at its front edge, which is intended to be introduced in the slot *c* of the pattern after the cutter is taken from the supporting-block, and the pattern is thereby easily withdrawn from the design-bed.

392 It is apparent that any number of duplicates may be made from a single pattern of any desired design, and thus the work of making cutters is rendered much easier and better than under the old way.

Having fully described my invention, what I claim as new, and desire to secure by letters patent, is—

1. The method described of forming hand-cutters for confectioners' use, consisting of molding the strip which forms the cutting-edge around a pattern-block, and soldering it to the cutter-plate as each part of the strip is brought in contact therewith successively, as specified.

2. An apparatus for the manufacture of cake-cutters, the same consisting, essentially, of a supporting block and a design-pattern, with mechanism for clamping a main-plate blank between the two, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of February, 1877.

HENRY ERZINGER.

Witnesses:
FRED. CHRISTEN.
HENRY MILLER.

393 Afterwards, to wit, on the twelfth day of October, 1886, there was filed in said clerk's office a stipulation in said entitled cause; which said stipulation is in the words and figures following, to wit:

Stipulation.

United States Circuit Court, Northern District of Illinois.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.*
} In Equity.

It is hereby stipulated by and between the parties to the above-entitled cause that the following list correctly enumerates the pleadings and proofs submitted to the court by the parties to said suit:

Bill.
Answer.
Amendment to answer.
Replication.
Stipulation admitting use by defendants since March 20, 1883, of devices like "Complainants' Exhibit A."

Complainants' *prima facie* evidence, consisting of—

Testimony of William M. Crawford.
" " Henry Gross.

Defendants' evidence, consisting of—

Testimony of George J. Hill.
Testimony of Cornelius E. Rumsey.
394 Testimony of William B. Krebs.
" " Jacob Roth.
Testimony of Galeb H. Marshall.
" " E. Nelson Blake.

Complainants' evidence in rebuttal, consisting of—

Testimony of George W. Earhart.
" " E. E. Ensign.
" " Wm. M. Crawford.
" " Philip T. Dodge.
" " Thomas J. W. Robertson.
" " William Gohl.
" " George W. Earhart.
" " William M. Crawford.
" " Theodore H. Butler.
" " Charles H. Appel.
" " Thomas H. Keller.
" " William M. Crawford.
" " William G. Wilson.
" " Godfrey Keebler.
" " James W. Ruger.
" " William M. Crawford.

Defendants' evidence in reply, consisting of—

Testimony of Jacob Roth.
" " John McMahon.
" " William Nichols.
" " Charles Sawyer.
" " George B. Durkee.
" " Henry Callahan.
" " Jacob Roth.
" " John McMahon.
" " Martin De Tamble.

395 Complainants' evidence:

Testimony of John C. Taylor.
" " George W. Earhart.

And exhibits marked as follows:

" Complainants' Exhibit A."
" " B."
" " C."
" " D."
" " E."
" " F."
" " Filings No. 1."
" Defendants' Exhibit No. 8."
" " No. 9."
" " No. 10."
" " No. 11."
" " No. 12."
" " No. 13."
" " No. 14."
" " No. 15."
" " Letters Patent No. 184,786."
" " " " " 224,446."
" " " " " 25,767."
" " " " " 139,217."
" " " " " 190,018."
" Complainants' Exhibit Filings No. 2."
" " First Sketch."
" " New York Sketches, March, 1880, No. 1."
" " " " " " " 2."
" " March, 1881, Copy."
" " " 1882."
" " Crawford's, March, 1880, Letters."
" " Affidavit of William M. Crawford."
" " Earhart No. 1."
" " " " 2."
" " " " 3."
" " " " 4."

396 " Complainants' Exhibit Earhart No. 5."
" " " " 6."

"Complainants' Exhibit Earhart No. 7."
" " " " 8."
" " " " 9."
" " " " 10."
" " " " 11."
" " " " 12."
" " New York Machine."
" " Brass Cutter."
"Defendants' Exhibit No 1."
" " " 2."
" " " 3."
" " " 4."
" " " 5."
" " " 6."
" " " 7."

L. HILL,
Of Counsel for Appellants.
BANNING & BANNING,
Of Counsel for Appellees.

(Endorsed:) Filed Oct. 12, 1886. Wm. H. Bradley, clerk.

397 Afterwards, to wit, on the seventeenth day of December, 1886, there was filed in said clerk's office a stipulation in said entitled cause; which said stipulation is in the words and figures following, to wit:

Stipulation.

United States Circuit Court, Northern District of Illinois.

THEODORE H. BUTLER *et al.*
vs.
GEORGE STECKEL *et al.*
} In Equity.

It is hereby stipulated by and between the parties to the above-entitled suit that time for filing the record in the Supreme Court shall be extended to March 1st, 1887.

HILL & DIXON,
Of Counsel for Compl'ts.
THOMAS A. BANNING,
Of Counsel for Def'ts.

Endorsed: Filed Dec. 17, 1886. Wm. H. Bradley, clerk.

398 NORTHERN DISTRICT OF ILLINOIS, *ss:*

I, William H. Bradley, clerk of the circuit court of the United States for said northern district of Illinois, do hereby certify the above and foregoing to be a true and correct transcript of the record of all the proceedings had in said court made under the stipulation filed October twelfth, 1886, in the cause wherein Theodore H. Butler, George W. Earhart, and William M. Crawford are the complain-

ants and George Steckel and Frederick Steckel are the defendants, as the same appear from the files and records of said court now remaining in my custody and control.

In testimony whereof I have hereunto set my hand and affixed the seal of said court, at my office, in Chicago, in said district, this twenty-first day of December, 1886.

Seal of Circuit Court U. S., Northern Dist., Illinois, 1855.

WM. H. BRADLEY, *Clerk.*

Endorsed on cover: N. Illinois C. C. U. S. No. 36. Theodore H. Butler, George W. Earhart, & William M. Crawford, appellants, *vs.* George Steckel and Frederick Steckel. Filed March 1, 1887.

IN THE

Supreme Court of the United States.

OCTOBER TERM, 1890.

No. 36.

THEODORE H. BUTLER ET ALS., APPELLANTS,

vs.

GEORGE STECKEL ET AL., APPELLEES.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS.

BRIEF FOR APPELLANTS.

LYSANDER HILL,
JOSEPH R. EDSON,
Of Counsel.

JUDD & DETWEILER, PRINTERS, WASHINGTON, D. C.

IN THE

Supreme Court of the United States.

OCTOBER TERM, 1890.

No. 36.

THEODORE H. BUTLER ET ALS., APPELLANTS,

vs.

GEORGE STECKEL ET AL., APPELLEES.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS.

BRIEF FOR APPELLANTS.

The appellants were complainants in the court below, suing in equity for the infringement of their patent, No. 274,264, applied for July 6, 1882, and granted and issued March 20, 1883, for improvement in *bretzel-cutters*. Their bill was dismissed for reasons set forth in the opinion of Judge Blodgett, printed on pages 18, 19, 20 of transcript.

Assignment of Errors.

The grounds of the appeal are as follows:

1. That on the facts stated in the opinion of the court below patentable invention was required to produce and was

exercised in producing the machine of the patent in suit, and it was error to hold the contrary.

2. That in view of the state of the art shown by the record and of the other evidence in the record it was error to hold that the production of the appellants' patented machine in suit did not involve the exercise of patentable invention.

3. That on the evidence in the record not only is no prior operative bretzel machine shown to have existed, but further, it is not proved beyond a reasonable and just doubt that there was even a prior cake-cutter containing operative "creasers" and "off-bearing scrap passages," adapted to do or clearly and obviously showing how to adapt a machine to do the work necessarily required of a successful bretzel machine; and therefore the court below erred in assuming the prior existence of such cake-cutters to have been established, and further erred in holding that, in view of the evidence as to such cake-cutters, no patentable invention was involved in the production of the machine of the patent in suit.

4. That on the evidence in the record it stands proved that, in consequence of the great difference between the process employed in the preparation and cooking of bretzels and the process employed in the preparation and cooking of other cakes, the characteristics and working conditions of a bretzel-cutter are materially different from those of an ordinary cake-cutter; and it was error for the court to disregard this evidence and proceed upon the contrary hypothesis.

5. That it was error to hold the appellants' patent in suit invalid for any reasons appearing in the opinion of the court below or in the record of the case.

6. That the court below should have sustained the appellants' patent in suit and adjudged the appellees to have infringed it, as in the bill alleged; and it was error not to so hold.

Our Brief Below.

In the trial below, the complainants submitted a very full and exhaustive printed brief, arguing all the questions involved in the case, and citing the evidence in support of every statement made.

Owing to want of time and pressure of other work on the part of appellants' counsel, they have been compelled, for the purposes of the trial here in this court, to file and use copies of that brief here, and they pray the court to accept the same. The paging of the record below appears in the printed transcript, and the references of the old brief are, therefore, as readily and easily verified as if the brief were reprinted for this court.

In addition thereto, we submit the following new brief, which is intended merely to condense some of the points made in the old one, and to point out some of the errors in the reasoning of the learned judge below, and in which we beg the indulgence of the court if we not infrequently refer to the argument of certain points in the old brief, citing the pages of such references, instead of reprinting such arguments in full herein.

Condensed Brief of the Argument.

Except in the matter of assuming, on the suspicious testimony of the partially discredited infringer (one of the real, though not nominal, defendants) Roth, that cake-cutters

adapted to cut out and properly form cakes in the shape of the letter **B** and character **&** were known before the appellants' invention in controversy, the opinion of the court below states the facts very correctly; and, except in the particular mentioned. our objections are rather to the inferences drawn by the court from the facts and to what we believe to be its misapplication of the law than to its findings of fact.

The following facts are indisputably established by the evidence:

The appellants' *machine* is not anticipated in the prior art. They were the first to produce a successful bretzel machine *of any kind whatever*, and they were the first to produce a successful *single-die* bretzel machine. Prior to their invention the importance and great need of such a machine had been recognized for years, and it was well understood that a fortune awaited the successful inventor of it, and that great pecuniary gains would result to such bakers as should be the first to acquire the use of such a machine.

Stimulated by these great and certain prospective rewards, a large number of persons had attempted to make a machine which should successfully cut bretzels and had expended a considerable amount of money and time in efforts to produce such a machine, and they had all failed to accomplish the desired result. The universal opinion and belief among bakers was *that it could not be done.* Several machines had even been patented for the purpose, but, proving inoperative and useless, had been abandoned. It is in evidence that these different parties spent about $30,000 in their unsuccessful efforts, and that the appellants spent about

$30,000 more before they achieved success by the invention of the simple, cheap, practical, and effective machine of the patent in suit.

All these matters are clearly set forth, with citations of the evidence, in our former brief, pages 4 to 29.

On the face of these uncontroverted facts it would seem that there could be no fair or reasonable doubt that the production of this machine involved and required the exercise of invention. Yet the court below finds that it did not!

It reaches this conclusion, not because any practical *bretzel machine* ever existed prior to that of the appellants—for it concedes that no such thing ever existed and that great efforts had been made unsuccessfully by many different persons to produce such a machine—but because, prior to appellants' solution of the problem, *cake-cutters* capable of cutting out horse-cakes, elephant-cakes, and letters of the alphabet, had before been known. It is not pretended that any of these old, and for years well known, cake-cutters ever made a bretzel or ever were competent to make one, or that, as a matter of fact, they ever suggested or ever would have suggested how to make a successful bretzel machine, but simply that now, after the problem had been solved, the court below thinks that they *ought to* have suggested the solution, and in effect holds that because they ought to, but never did, the patent is invalid for want of invention.

We answer the argument of the court below as follows, and with full confidence that our position is correct in law:

1. The patented bretzel machine is admittedly not anticipated by any prior *bretzel machine*. Before it can be held

anticipated by any other machine *which was not a bretzel machine* it must be found that the analogy between the work to be done by such other machine and the work to be done by a bretzel machine was so striking and *obvious*, and the conditions for successfully accomplishing such two works so exactly alike, that, before the making of any operative and successful bretzel machine, any workman skilled in the art, seeing the cracker machine, would, as a matter of fact and beyond a reasonable doubt, have seen and known just how to go to work to make a successful bretzel machine.

Now, it is a *proved fact* here that this was *not* thus obvious. On this point we do not rely upon guess-work. Men skilled in the art tried in vain for years and at great expense to produce a practical bretzel machine, and the knowledge of the old and well-known cake-cutters referred to did not aid them in the least to solve the problem. The court below says, in its opinion:

"*Why men should have groped so long in the effort to make a bretzel-cutter or bretzel machine with the ordinary cake-cutters before them it is difficult to understand, but the proof shows that they did so.*"

Then, of course, "the proof shows" that the thing so confidently assumed to be obvious "after the event" was not at all obvious before the event.

The court continues:

"But I cannot see that the mere fact that others were so long *wandering by the wrong path* is any evidence that it requires invention to accomplish what has been done by taking the direct path pursued by these patentees."

Is it not perfectly evident that everybody "wandered in the wrong path" simply because the right path was not *at that time* obvious to anybody, and that to a skilled workman hunting for a possible bretzel machine the old-fashioned and well-known cake-cutters were not a success as guide-posts? Now that the way has been traveled and blazed by these patentees it is easy enough for anybody to follow it, and it is easy to see that it runs along in the vicinity of the long-trodden path to the cracker machine, and that the two paths even cross each other at several points, but come out at different terminals. Now that the new path has been beaten down and its boundaries marked it is easy enough for a person traveling along the old one to recognize it at the crossings; but it is a proved fact, *and not a matter of guess-work*, that just such persons were unable to recognize it before it was so discovered and marked. Are the real discoverers, who have conferred an important benefit upon their fellow-men, to be deprived of their reward and turned out of court because the old path was so near and so much traveled that it now seems as though somebody *ought* to have anticipated the discovery of the new one?

What the world *had* was a cracker machine—whether adapted to cut the letters "**B**" and "**&**" or not is of little practical consequence—what it *wanted* was a successful bretzel machine, and *that* it did not know how to make until these appellants discovered the secret and produced the machine here in suit.

The court below further says:

"And the merit of these patentees seems to me to have been in overcoming a fixed prejudice in favor of the hand-made goods rather than in inventing any radically new process for making the same goods by machinery."

We answer:

1. *There is not a word of evidence to support this assumption.* It is not shown that there was any difficulty in selling the bretzel machines or their product, or that the appellants ever had to spend a penny to overcome objections to the new product. Unanswerable proofs show that the difficulty which had to be met and overcome was not the *commercial* difficulty of selling the machine or product, but the *mechanical* difficulty of producing a machine which would successfully make the product. What the court below did was to assume that the former existed in the absence of proof, and that the latter did not exist in the face of positive proof. No machine or product, in the whole history of the arts, was ever more readily and easily introduced upon the market than this. On the other hand, few instances exist in history where, with what seems afterwards an apparently simple problem to solve, inventors everywhere found so many little pestering, unforeseeable, and to everybody except these patentees insuperable mechanical difficulties in the way as were found in the many prior fruitless efforts to produce a successful bretzel machine. (See our former brief, pages 9 to 21, 25, 26, 27, 46 to 54, and page 62. In addition, see page 7 of said brief, where, on the evidence, it is pointed out that *a die made from plaster casts of the hand-made bretzel* will not do the work successfully and practically.)

We therefore respectfully submit that the action of the court below in assuming an imaginary commercial difficulty that never existed and ignoring the proved mechanical difficulties—an action that was, of course, controlling as to its judgment of the case—was not justifiable on the evidence or under the law.

2. If the court below, in the extract from its opinion last above quoted, means what it says, it would appear that it regarded the gist of the invention in suit as residing in the *process*. But the process is not in suit. The invention resides solely in the new machine, and that machine is the first In the art of bretzel-making—is the pioneer in this line of invention.

Up to this point in the discussion we have assumed, for the purposes of the argument, as did the court below, that cake-cutters capable of cutting out and properly fashioning cakes in the form of the letter "B" and the character "&" were known before the appellants' invention in controversy. We submit that it is entirely immaterial whether they so existed or not. They gave the world no knowledge how to make a bretzel machine, if they in fact existed. It is clear that their dies were not adapted to bretzels and would not make bretzels. If, as is proved, *a die made from a plaster cast of a hand-made bretzel* would not do the work properly (Transcript, old paging, 284–287; new paging, 294–297), *a fortiori* a die adapted to make the letter "B" or character "&" would not properly make a bretzel, nor would it show how to make a die that *would* make a bretzel. If it had ever suggested to anybody the making of a bretzel machine it would only have suggested the trial of a die formed exactly like a hand-made bretzel, and if this trial had been made the machine would have been a practical failure. A different form of die had to be invented. The points of difference *were not then known, and there was nothing known in the art to indicate what they were.* They could be learned only by close study of the conditions and practical experi-

ment. The bretzel, after having been cut out, goes through a peculiar process of "raising," boiling, and baking—a process not used in making other cakes—and it was not known and could not, *a priori*, be known what effect even slight changes of form in the die would have upon the adaptation of the bretzel-cake to successfully go through these subsequent and peculiar treatments. (See p. 6 of our former brief.) Who, for example, could have known beforehand, or would even have dreamed, that a bretzel-cake cut perfectly flat on one side and molded in a certain way on the other side would, as the result of being set away for hours to "rise," and of then being boiled in lye and afterwards baked, become drawn up into a rounded form on both sides and yet preserve the peculiar lines impressed upon it to represent the twisting and tying together of the crossed arms! We know it now because the discovery and invention of the appellants have demonstrated it, but before their invention nobody would have thought of trying it, and nobody would have expected a successful result from it. Bakers who knew all about the bretzel business considered the practical problem insoluble (see our former brief, pp. 10, 11), and after it was solved regarded the machine as "one of the most wonderful pieces of mechanism that has ever been used in the baker's business." These things are the evidence of *fact* before the event, and not the guess-work of persons practically unfamiliar with the business after the event. It is, therefore, evident that the court below was wrong in considering for a moment that the old "**B**" and "**&**" cake-cutters, if they ever existed, disclosed to the world how to make an operative and successful bretzel machine. The fact that they never *did* lead to the making of a bretzel

machine, although the want of such a machine was sorely felt among those completely skilled in the art as it then existed, is a sufficient answer to the suggestion ; and, if it were not, a little study of the peculiar practical difficulties and a realization of how many facts were not then known, but have been since discovered and made known by the production of this successful machine, ought in all justice and fairness to settle the question in favor of the appellants.

But, we submit, it is not proved beyond a fair and reasonable doubt that the alleged "**B**" and "**&**" cake-cutters ever were in existence prior to the appellants' invention of the patented bretzel machine. Their alleged existence rests upon the testimony of an infringer, *Roth*, who made the infringing machine used by the defendants, and who is himself one of the real defendants in this case and deeply interested in its result. This evidence is reviewed and its inconclusiveness shown on pages 37, 38, and 39 of our former brief. It is also shown immediately thereafter, on pages 39 40, 41, 42, that even if they had been made they would not work successfully *in bretzel dough*. They were tested in such dough during the taking of the evidence, and the tests demonstrated that they were inoperative for the purposes of a bretzel machine. (See references at bottom of page 40 of our former brief.) They ought, therefore, to have been disregarded by the court below, both because there is a reasonable doubt that they ever existed prior to the patent in suit and because of the proved fact of their incompetency to operate successfully in the material of which bretzels are made. Whether they would operate in the soft, pasty dough of which some other kinds of cakes are made does not

appear; *but they would not operate in bretzel dough,* which is hard and stiff and quite dissimilar to the dough used for many other purposes.

Finally, to complete the proof of "patentable invention," even to the point of a demonstration, it is proved by the evidence that in the absence of the full and complete information given by the patent in suit ever a person skilled in the art who had gotten the idea of making a flat bretzel die with creases to mark the twist of the bretzel arms and their union with the "bow" at their ends *could not make the thing work practically and had to abandon it.* S. S. Marvin & Co., of Pittsburgh, Pa., had been at our shops at Columbus, Ohio, where our work was going on, prior to our patent, and had gotten the idea of a flat bretzel die. They went home and constructed one "without leave or license," and it was not satisfactory, although they continued to use it, and afterwards made some others like it for their own use. These machines had no "creasers," and, of course, failed to give the product the characteristic appearance of twisted and knotted "arms," having their ends pressed into the "bow." Either from subsequent information obtained from our shop or from original suggestion—it matters not which—they then undertook to remedy this defect by means of dies provided with creasers, and they were utterly unable to make the machine work satisfactorily, and *had to take out the creasers and abandon the effort.* (See our former brief, pages 50 and 55 to 63.)

The court below thought that all that was necessary was for parties to get into "the direct path" and then go ahead. It says: "All they had to do was to make the die and adopt the old form of cutting dies used in bakeries for many years,

and the result seems to have been accomplished." Yet here, in case of S. S. Marvin & Co., were skilled workmen, with strong incentives to success, who actually entered upon "the direct path" (after one of the firm had been at our shop) and who yet were unable to follow it. In other words, here is the evidence of actual experience and fact against mere guess-work.

After a thing for which the world has waited for ages has been successfully accomplished and we have become familiar with the way to do it, how hard it is for any of us to realize the darkness and helplessness in which we were groping before the discoverer came! In the light of the "knowledge after the event," how natural it is to feel, with the court below, that it is difficult to understand "why men should have groped so long" instead of taking "the direct path" to success! But in the eye of the law the very fact that men *were* groping, and that, with the strongest incentives to success, they were baffled in every effort to achieve it is confirmation strong as Holy Writ that the way was not obvious, and that it required, not the services of the skilled workman, but of the discoverer and inventor to lead men into it and guide them to its termination.

Respectfully submitted,

LYSANDER HILL,
JOSEPH R. EDSON,
Of Counsel.

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IN THE

Circuit Court of the United States.

For the Northern District of Illinois.

THEODORE H. BUTLER,
GEORGE W. EARHART,
WILLIAM M. CRAWFORD,
v.
GEORGE STECKEL AND
FREDERICK STECKEL.

In Equity.

COMPLAINANTS' BRIEF.

FRANK BAKER AND
EDSON BROTHERS.
Solicitors for Complainants.

JOSEPH R. EDSON AND
HILL & DIXON.
Counsel for Complainants.

CHICAGO:
JNO. C. MACGREGOR, PRINTER, 66 ASHLAND BLOCK.
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UNITED STATES CIRCUIT COURT,

NORTHERN DISTRICT OF ILLINOIS.

BUTLER *et als.* / STECKEL *et al.* } *In Equity.*

COMPLAINANTS' BRIEF.

I. THE SUIT.

This bill is in the ordinary form, for the infringement of letters patent for Bretzel Cutter, No. 274,264, dated March 20th, 1883, the application for which was filed July 6th, 1882. Infringement is clearly proved, and, although denied in the answer, there has been no attempt to sustain the denial by evidence. The infringing machine is shown in Complainants' Exhibit A, and a stipulation, printed on page 13, admits the use of this form of bretzel cutter by the defendants, at the City of Chicago, since March 20, 1883. The fact that this machine is an infringement of all three claims of the complainants' patent, is proved by Crawford, pp. 14–18, Gross, pp. 19–22, and Dodge, pp. 87–96.

Although Steckel Brothers, a firm of bakers, doing business in Chicago, are the defendants of record, yet the firm of Roth, McMahon & Co., of Chicago, manufacturers of

bakers' machinery, are also substantially defendants, inasmuch as they made the infringing cutters for the defendants, (Roth, pp. 55, Ans. 18), and advanced the money to defend this suit (Ib. p. 55, cross-ans. 3). It also appears on the testimony of Crawford (p. 178, ans. 23) that before this suit was brought, the defendants were at first desirous of making some arrangement with the complainants and taking a license, but, after advising with Roth, McMahon & Co., they concluded to fight the suit, stating that Roth, McMahon & Co. had agreed to pay all costs of the suit. It further appears from the testimony of the same witness, (p. 178, ans. 24) that at that time, one of the complainants interviewed Mr. McMahon, who at first lied about the matter, denying that he had made any bretzel machines for anybody, but finally, after ascertaining that the complainants knew all about it, admitted that he had been lying. The firm of Roth, McMahon & Co. seem to have the reputation of professional infringérs. (Ruger, p. 209; Earhart, p. 290.)

Two defenses are set up in the answer, to wit:

First; that the invention is not patentable, in view of the state of the art, but is the product of mere skill and judgment.

Second; that the patent is anticipated by certain patents and prior inventions.

II. The Patent.

The patent here sued upon contains three claims which are as follows:

"1. A flat die for cutting bretzels, having the bow a, the "loops a^1, a^1 the intermediate twisted portion, and the ends "a^3, a^4, and provided with the central creaser, a^6, the side

"creasers, a^3, a^3, and the end creasers, a^2, a^2, projecting into "the bow, *a*, substantially as shown and described.

"2. In a bretzel-cutter, the combination of the die A, per- "forated, as described, for the reception and passage of the "scraps, and for the expelling-studs, F, with said studs, the "guide rods C, the base B, provided with feet or projections "b^1, the springs *b*, perforated plate D, and the hand piece "E, substantially as shown and described.

"3. A flat bretzel-shaped die, having three off-bearing "internal scrap passages or channels, and perforations for "the expelling-studs, in combination with the expelling-studs, substantially as shown and described."

It will be seen that the gist of the invention claimed in the first claim is the *flat die*, having the various peculiarities, *and particularly the creasers*, mentioned in the claim; while the gist of the second claim is the combination of *this particular die* with the other elements constituting the entire machine as enumerated in the claim. It will be shown that these two claims,—the first and second—are to be construed broadly just as they stand in the patent, there being nothing in the prior state of the art which can be appealed to to limit their scope.

The third claim, which is broader in form, and is not limited *by any mention of the creasers*, may or may not be construed as broadly as it reads, according as the court may or may not find these complainants to have been the first to make the broad invention therein referred to.

The defense urged against the first two claims is, in brief, that the die and the machine therein claimed involved no inventive ingenuity, but only mere skill and judgment. This defense, the complainants answer, first, by proving the enormous practical difficulties which were met with in their

attempt to reduce the same to practice; and, secondly, by proving the fact that many other inventors had endeavored to produce the inventions, and had spent much time, study, labor, and expense in the effort, but had totally failed.

The same defense is urged against the third claim, and is answered in the same manner. To this claim, the defense is also made, that it had been anticipated by the inventions of others. In answer to this last defense—anticipation—the complainants prove their own priority of invention, by establishing the fact conclusively that they were the first to conceive the invention, and were diligent in reducing it to practice. (See *Reed* vs. *Cutter*, 1 Story, 590; *Reeves* vs. *Keystone Bridge Co.*, 5 Fish, 456; *Johnson* vs. *Root*, 1 Fish., 351; *White* vs. *Allen*, 2 Clif., 224; *Adams* vs. *Edwards*, 1 Fish., 1; *Kendall* vs. *Winsor*, 21 How., 329.)

III. The Bretzel.

The bretzel originated with German tribes, in the remotest antiquity, and is known in their histories for over 700 years. In later ages its manufacture spread over the civilized world; and it has become a staple commodity. The bretzel has always, until recently, been made by hand, *and the complainants are the first persons in the world who ever successfully made them by machinery.*

From an article in "Ausland," (a scientific foreign journal) of March 30th, 1885, on "Eastern," the festival of returning spring among the Indo-German tribes, we quote the following:

"One of the peculiar features of their (the old Germanic) festivities was, the night before "Eastern" to run a wheel, covered with tar, and set on fire, down a steep hill. This wheel signified the returning sun, and the festival cakes baked on this occasion had the

form of a wheel, and were called Bringla-ring, which is the present name of the bretzel in Denmark, Sweden and Iceland."

We find from other historical references to the subject that the peculiar symbolical form of this festival cake became so interwoven with their religious institutions that it reappeared in connection with other religious rites and ceremonies, and was even embroidered upon the garments of their priestesses in the early ages. The cake was used not only as an Easter cake, in which case it was made rich and sweet and variously ornamented with confectionery, flowers, etc., but it was also used as a fasting cake and upon funeral occasions, in which case it was compounded of flour, salt and water, and boiled in the water of ashes, indicative of penitence and humiliation. For whatever purpose it was made, and however it was compounded, its form, symbolical and of religious origin, remained persistent and invariable. It is a curious fact that of the two kinds of bretzel —the one for festive, and the other for penitential occasions—the funeral cake alone should have established itself at last as the indispensable adjunct of a lager beer saloon!

The Christian missionaries who visited these tribes were too wise to forbid this national cake or biscuit, but simply ratified its use and adopted it in connection with the Easter festival and with the observance of Lent. Finding its way to Christianized countries, it was called in Italy, "Bracciatello," and in Latin, "Bracellum"—hence, "bretzel."

It will thus be seen that the bretzel is distinguished in form from all other articles of food; a cake would still be a cake, if cut into any one of thousands of forms, but a bretzel would not be a bretzel, unless made in the form so unalterably established by thousands of years of use, and by its ancient symbolical associations.

The process of making bretzels is described by Earhart

p. 71, ans. 2, p. 161. ans. 174, Sawyer, p. 234, ans. 21, Gohl, p. 117, and Butler, p. 186. It is there shown that they are not only made from a kind of dough different from that used in crackers and cakes, but that they are made by so entirely different a process, that bretzel baking is a trade of itself, not generally known to persons engaged in the manufacture of crackers and cakes, and that such persons would know nothing more about the manufacture and treatment of bretzels than they would about the manufacture of candies. Flour, with a little lard, water and yeast, is mixed into a stiff dough: the bretzel is then formed by hand or machine, and is then set aside for a while "to prove" or, as our grandmothers would have called it, "to rise." It is then boiled in lye, after which it is salted, and then baked in an oven. It is thus, in the course of its manufacture, subjected to three different conditions of temperature, to wit, the "proving" temperature, the boiling temperature, and the baking temperature. These three treatments tend to alter both its size and its form, so that in machine-made-bretzels, the article ultimately produced at the end of the baking process, is not, in size or form, the same article which originally came from the die. In the proving process, it enlarges in every direction, and, although cut with square corners, it assumes a roundish form, (Butler p. 186, ans. 5). As a necessary consequence of these facts, it follows, that the problem of making bretzels by a die, is an entirely different problem from that presented in the manufacture of metal, clay, glass and other similar articles by dies, inasmuch as, in the latter class of articles, the die can be made in the exact form of the resulting product, whereas, on the contrary, a bretzel die must not be made in the exact form of the resulting product, but its form must

be so proportioned that the blank which it cuts out will *assume* the proper form when subjected to the subsequent treatments. Considering this fact, it becomes at once obvious that the production of *such* a die, involved not only observation and calculation, but careful study, invention ingenuity and a long course of experimentation. *It is in evidence in this case, that dies made from plaster casts of hand-made bretzels, will not produce a practical machine-made bretzel.* (Earhart, pp. 280—287, ans. 3, 5 and 7, and see exhibits consisting of the plaster casts, dies, and both baked and unbaked bretzels made therewith, introduced in evidence on pages 284 and 285).

It should be kept in mind that the hand-made bretzel was the only form of bretzel known prior to the successful introduction of bretzel machinery by these complainants. The hand-made bretzel was formed by rolling out a piece of dough into the shape of a cylindrical roll, tapering at both ends, and then bending it into a form approximating a ring, crossing its ends within the ring, and attaching their extremities to the opposite side or bow of the ring by the adhesiveness of the dough itself. The two "arms" (as they are technically called), crossing within the ring, are not lapped one over the other, but are *twisted around each other* so as to form *a half knot, each arm passing both under and over the opposite arm*, thereby simulating crudely the rim of a wheel, with the hub and the radiating spokes. It follows that the parts of the bretzel *do not lie in the same plane* but, at their different points, occupy different planes. The form is so peculiar and complicated that any attempt to produce it by machinery involved the greatest mechanical difficulties—difficulties so peculiar and apparently insurmountable as to have resisted for a thousand years all ef-

forts to overcome them. The nature of these difficulties, and the amount of study, experiment and inventive effort required to overcome them, can be understood and appreciated only by a careful and patient study of the facts proved in this case. The many abortive efforts made by others, occupying years of time and consuming large amounts of money, only to end invariably in failure,—when considered in connection with the immense amount of study, experiment, labor, anxiety and expense incurred by these complainants before they perfected their machine; and in connection with the enormous utility of their machines and the revolution they immediately commenced to work in the trade; and in connection with the fact that a successful bretzel-making machine was universally regarded by the most skillful mechanics in the world as a physical impossibility until the complainants demonstrated the contrary—can leave no doubt on the mind that the invention far transcended the power of mere skill and judgment, and, indeed, involved the exercise of the highest inventive intelligence. As we have already seen, the problem was not merely to *reproduce*, in plastic dough, the peculiar and difficult characteristics of the completed and baked bretzel, but to *produce* such a form of plastic, leavened dough, as that, when it afterwards had "raised" or "proved" and had then been boiled in lye and baked, it would finally result in the similitude of a completed bretzel.

IV. NOT OBVIOUS THAT THE RESULT COULD BE ACHIEVED BY THE USE OF DIES; AND FAR LESS OBVIOUS THAT IT COULD BE REACHED, IN EFFECT, BY THE USE OF A SINGLE DIE.

We have stated the problem; its solution by the use of dies was far from obvious, and, by the use of a single die, was almost inconceivable.

1. Its solution, *by any possible means whatever* was not obvious, but was deemed by the best practical experts in the world to be a mechanical impossibility. *Wilson*, of Philadelphia, testified (pp. 200–203) that he is one of the most extensive manufacturers of biscuits and crackers in this country, having a large foreign and domestic trade, with agencies in London, India, and Australia, besides all the principal cities in the United States (ans. 2;) that when Crawford first spoke to him of his bretzel-machines, witness told him that "*it was impracticable*," and was "*thoroughly satisfied*," *in his own mind*, "*that it was impracticable and impossible to make a bretzel by machinery*," (ans. 3); and that he now regards it as "*one of the most wonderful pieces of mechanism that has ever been used in the baker's business*." (Ans. 3.) This is the disinterested testimony of a man known all over the country as one of the leading business men of the United States, in this line of business —a man thoroughly competent to speak on this subject— a man having no connection with the complainants, and no interest, directly or indirectly, in the result of this suit. *Earhart* (p. 132, ans. 17,) testified that when he first showed his model to the trade, "*in every instance* where it was shown they expressed their belief that it would be a good thing *if it would do what we claimed for it.* And I believe every one of them was of the opinion *that it wouldn't work*, and do the work as we claimed it would. *The expression was common that bretzels couldn't be made by machinery*." Here, also, was the expression of disinterested practical

men, who understood the difficulties involved in the work, and appreciated their magnitude. *After the problem was solved,* it became easy for the defendants (Roth, and McMahon), and their co-infringer, Ramsey, Ramsey's workman, Krebs, Roth & McMahon's workman, De Tamble, and sub-tenant, Durkee, and two or three bakers totally unfamiliar with the the manufacture of bretzels, to *prophesy;* but we have stated the testimony of practical, experienced, and disinterested parties, given *before* the problem was solved—a kind of testimony that comes with controlling force. The defendants' opinions are only what Judge Sprague (1 Fish., 175) called "*prophesy after the event;*" what Judge Woodruff (5 Fish., 63) referred to as "*the wisdom which comes to an infringer*" after he is made to face the penalties of the law; what Mr. Justice Grier alludedto (1 Fish., 284.) when he said, "I am disposed to distrust *that wisdom which succeeds the event;*" and what Mr. Justice Curtis, (2 Fish., 672) referred to when he said, "nor does the validity of a patent depend on an opinion formed *after the event* respecting the ease or difficulty of attaining it."

2. Not only was the solution of the problem, by any possible means, not obvious *before* the event, but it was particularly not obvious that it could be solved by the simple means of *dies.* If it had been *obvious* that mere dies could be practically employed to cut and mold bretzel-blanks, then no intelligent mechanic would have essayed to make bretzels by other and far more complicated and expensive machinery not operating with dies. This fact seems to be unanswerable. Yet two experienced mechanics and bretzel-bakers, Keller and Myers, commenced, in 1879, to try to make a bretzel-machine upon another and

different principle, without the use of dies, and actually spent $28,500 in the effort without achieving success. (Crawford, p. 83, ans. 4; Keller, pp. 196–199; Keebler, pp. 203–205; Ruger, pp 207–208.) The principle upon which they tried to build their machine is well described in their patent of May 15, 1883, No. 277,573 (an Exhibit in this suit) as follows:

"The object of this invention is to take suitably prepared dough, press it, cut it into suitable and equal portions, roll the portions into form, bring the ends together and twist them, and deliver them upon a carrier operating to receive them without being piled one upon another."

Their machine was so complicated that it required five sheets of drawings, consisting of seventeen different "figures," to illustrate it. Although this machine had cost five years of time, and a fortune in money, and was finally patented, yet it had, up to the time of taking the testimony of the parties in this case, proved a total failure, and they were still at work trying to make it a success. (Keller, p. 199, ans. 12; Keebler, p. 205, ans. 6; p. 204, ans. 3; Ruger, p. 208, ans. 3; Crawford, pp. 83, 84, end of ans. 4.) This machine was formed to make one bretzel at a time and sixty per minute, (Keller, p. 198, ans. 6.) including perfect and imperfect bretzels (Keebler, near top of p. 204.) Only 25 per cent. of these bretzels were perfect, while 75 per cent. were worthless. (Keebler, p. 204; Crawford, p. 83.) Crawford refused to purchase the machine, in 1879 or 1880, because it was a failure, (p. 83.) Ruger, a manufacturer of bakers' machinery, bought an interest in the invention and invested a large sum of money in it, and then abandoned it because "it was a failure," and "gave up all hope of getting a machine to work on that principle," (p.

208.) Keebler, a practical baker who also invested in the invention (p. 203,) tried to operate the machine in his business and then abandoned it (p. 204; bottom of p. 83 and top of p. 84.) The inventors made him another and better one, at their own expense, and he tried it, with various alterations and improvements, for six or seven months, and then, by reason of its inutility, refused to purchase it. (p. 204.) The defects of the machine were two-fold:—first, it would not make enough perfect bretzels to compete with hand labor (pp. 204, 205,) and, secondly, the "perfect" bretzels which it did produce *were not as good as hand-made bretzels because they would break much easier than the latter.* (p. 204.) This latter cause of failure *is an important one to be noticed*, for it indicates and illustrates one of the peculiar difficulties in bretzel-making, to-wit, the difficulty of getting their parts *so proportioned* and *so attached together* as to stand the rough handling which they are obliged to receive on their way to the consumer

Now, it is absolutely incontestible that, if the practicability of manufacturing bretzels by the simple and comparatively inexpensive die, had been *obvious, before the event*, these bretzel-bakers, and Ruger, one of the most extensive manufacturers of bakers' machinery in this country, would not have spent their time and invested their money in the Keller and Myers experiment. One such instance, *before* the event, outweighs a thousand volumes of the interested opinions of infringers and their helpers, and of other inexperienced persons, *after* the event. *Gohl*, a Washington bretzel-maker of twenty years' experience, (pp. 117-123,) and a disinterested witness, testifies that, even if informed that dies could be made for cutting crackers and cakes in different shapes, such as animals, birds, diamonds, squares,

letters of the alphabet, &c., &c., yet he could not, *before trial*, determine whether a die would be practically operative and successful for making *bretzels*. (Cross Ans. 35, p. 121.) See, also, the testimony of Wilson, that, when the die machine was described to him, he thought the idea impracticable, (pp. 200, 201,) and the expressions of the bakers, who, when they actually saw the *model* of the die machine, thought it would not operate successfully. (p. 132, ans. 17.)

We have, therefore, produced the strongest kind of evidence that can, in the nature of things, be adduced, to show that, whatever opinions may now be formed, it was, at least, not obvious, *before the event*, that bretzels could be successfully manufactured by the use of dies. The argument needs only one further confirmation, to-wit, the fact that, in a thousand years of bretzel-making, nobody has ever before manufactured bretzels with dies.

3. But if it was not obvious, before the event, that bretzels could be successfully made with dies, it was far less obvious that they could be successfully made *with a single die*, as in this patent here in suit.

As we have shown, the hand-made bretzel—the only bretzel known before the complainants' introduction of their machines—was *so constructed that its parts were not all in the same plane*. If, therefore, the idea of making them by dies should suggest itself to the mind of a mechanic, the thought would almost inevitably occur at once that two cooperating dies must be used, one to mold the parts projecting below the median plane, and the other to mold the parts projecting above such plane. We submit that an examination of the structure of an ordinary hand-made bretzel will show this con-

clusion to be almost inevitable; and we should accordingly have expected *a priori* to find it verified by the history of the various attempts to manufacture bretzels by machinery.

And, in fact, it is so verified. In 1875 or 1876, *Hill*, a workman in Ruger's shops at Buffalo, N. Y., undertook, in conjunction of one, Adamy, and by the aid of two skilled workmen, Berry and Waldo, to invent a machine for making bretzels with dies. (Hill, pp. 23—33.) It was an experiment, (Ans. 2, top of p. 30;) never put into practical use (Ans. 4, 5, same page;) never sought to be patented (Ans. 6, Id;) never completed, (Ans. 5, p. 33;) and "the whole invention or attempted invention was abandoned about 1876," (Ans. 8, p. 30,) and, therefore, passes into the limbo of abandoned experiments. *It was a machine in which the effect was sought to be reached by two opposing dies*, one to form one side of the bretzel, and the other to form the other side; and its only remaining utility is to demonstrate that this is the form in which a die machine would occur to an inventor's mind, if it occurred at all.

Again: The complainants' assignors, *Lampert & Huber*, undertook to get up a bretzel-machine to manufacture bretzels by the use of dies, and they patented this machine and its improvements, Nov. 28, 1876, No. 184,786; May 6, 1879, No. 215,006; January 27, 1880, No. 223,917; and February 10, 1880, No. 224,446.* *They, too, like Hill and his associates, conceived that two opposing dies would be*

*NOTE.—In the entire history of the art, up to March 20, 1883, the date of the patent here in controversy, *only five patents had been taken out on bretzel machines*; to-wit, the four patents of Lampert & Huber, above mentioned, and one patent, to Charles H. Appel, dated September 2, 1879, which will be discussed in this brief, farther on.

necessary, and constructed their machine on that principle. Even with the aid of two opposing dies, *they found that the invention involved almost insuperable mechanical and practical difficulties.* They began work trying to produce it, about 1872 or 1873 (Crawford, p. 177, ans. 19), Mr. Huber contributing his knowledge as a practical machinist, and Mr. Lampert his experience as a bretzel-maker (p. 177, ans. 20–21.) The complainants bought the Lampert & Huber machine, and an interest in their patents, about January 1, 1879, (p. 129, ans. 13,) and embarked in the bretzel-machine business. The machine, although patented, was not at that time fully successful, and the enormous labor, trouble and expense that were thereafter required to perfect it and make it a commercial success, *and, particularly, that were required to perfect the dies so as to make them wholly available for the purpose,* will be hereinafter, in another connection, more fully pointed out, and it will then be shown that the perfecting of these double-dies and the invention and development of the single-die here in controversy *went along together,* many of the difficulties met with being *common to both,* and the studies, experimentation, and knowledge thereby obtained, being equally applicable to both.

Again: about 1876 or 1877, one *Dr. Charles H. Appel,* of Lehigh County, Pa., attempted to make a bretzel-machine with dies, (Appel, pp. 194–196), and he, too, conceived that two opposing dies would be necessary. In his case, as in the cases of Hill and of Lampert & Huber, the conception of the possibility of making bretzels by the use of dies proved to be *a very different thing from the making of the invention.* He utterly failed, after spending five years of time and $500 in money in the effort. He came to the

conclusion that it was a mechanical impossibility to reproduce the form of a bretzel by dies, and in his patented machine he did not even attempt to make such form. And he finally abandoned the whole business in despair.

Thus it appears that, prior to the complainants' invention here in controversy, there were never but three attempts made to produce a bretzel machine working with dies, *and not one of the three parties conceived the possibility of doing the work with a single die.* Of the three parties, two failed utterly and abandoned the effort, and the third, Lampert and Huber, the complainants' assignors, succeeded only after enormous labor and expense, and fully succeeded *only after the complainants' studies and experiments upon the single die here in controversy had taught them how to overcome the mechanical difficulties involved both in the single die and the double die.*

All the parties connected with these prior efforts, except possibly Appel, were bakers or manufacturers of bakers' machinery, and therefore familiar with what was commonly known in the art, so that there was evidently nothing known in the art of a character to render any substantial assistance either in suggesting the idea of making bretzels with a single die or in the development of that idea into a practical machine. The idea, when first conceived by these complainants in 1879 (Earhart, p. 125, Ans. 4,) *was a new thing in the art.*

V. The History of the Making of Complainants' Invention here in Controversy.

About January 1, 1879, the complainants purchased their interest in the Lampert & Huber inventions and patents, and entered upon the business of manufacturing bretzel-machines, (p. 129, ans. 13.) With the patent right, they acquired also the *first* Lampert & Huber machine, which was delivered to them soon after the contract was made, and was set up and operated for experiment. (Earhart, p. 129, ans. 13; p. 156, ans. 154.) It was a crude affair, entirely unfit for practical work (p. 156, ans. 154;) had only one row of dies around each cylinder, as in the original patent of 1876 (p. 156, ans. 153;) and the dies were defective, showing imperfectly the lines and creasers forming the twist of the bretzel (p. 155, ans. 150; p. 163, ans. 179, 180.)

The *second* Lampert & Huber machine was built by Fowler & Rockwell, of New York City, for the complainants, in 1880, *and was a failure* (pp. 129–131, ans. 13–15; pp. 166–167.) Fowler & Rockwell are manufacturers of bakers' machinery, and are "the most experienced and skillful workmen in that branch of machinery" that can be found in the United States. (Earhart, p. 129, ans. 13; Crawford, p. 174, ans. 9; Ruger, p. 210, ans. 16; McMahon, p. 265, cross ans. 77, 78, 79; Keller, p. 199, ans. 11.) They estimated the cost of the machine at $600, and the time required to make it, at three months, (p. 174, ans. 8;) but, after working at it over a year, (p. 174, ans. 8; p. 129, ans. 13,) part of the time with the assistance of Crawford (p. 166, ans. 3,) at a cost of $4,000 (p. 129, ans. 13,) *with the aid of their own complete knowledge of the art of baking-machinery*, they produced the best that they could do in

bretzel-machines, (p. 174, ans. 8,) and it was a total failure as we have already seen. In this "New York Machine," as it is called by the witnesses, the dies were formed upon strong metal staves, and two of these staves have been put in evidence marked "Complainants' Exhibit New York Machine." By reference to these two Exhibits, (one taken from the upper and the other from the lower cylinder of the machine, and designed to operate together in forming the bretzel,) and by reference to the testimony relating to the New York Machine, (Earhart, p. 131, ans. 15; Crawford, pp. 167, 173,) it appears that several of the main defects in this machine *were afterwards ascertained to consist in the construction of the dies.* The openings were not sufficiently tapering to give the necessary clearance (p. 167, bottom of p. 173 and top of p. 174;) one of said openings was so small that it was almost impossible to force the dough through it when the dough was in certain conditions (p. 167;) the *creasers* are flush with the *cutting edge*, which caused them to cut the bretzel to pieces in the making (p. 131, ans. 15;) and the end creasers are made *in separate pieces and set into the die*, (same ans.) a fact which has been found by experience to be fatal in this class of machines, because the dough will be forced into the crevices and caused to stick so that the clearers fail to clear the bretzel from the die (Earhart, p. 73, ans. 8; Robertson, p. 104, end of ans. 7.) One very striking fact, strongly illustrative of the latent difficulties involved in this work, is found on page 167, viz: that the metal staves, although fully an inch in thickness, *were not strong enough for the purpose*, but would spring when the dough was passing through between the cylinders. Under such a powerful pressure, it is easy to

see that the slightest crevice would allow the dough to wedge in so that the clearers would fail to properly remove the bretzel without damaging it. Bretzel dough has to be used without flouring or dusting, and hence tends to stick. (Robertson, p. 105, ans. 10; Dodge, p. 91, ans. 9, 10.)

These defects of the New York Machine emphasize strongly another important fact, which is that the bretzel dies here in controversy are neither dies proper nor cutters proper, but a combination of *die and cutter*. They not only *cut out* the external form and internal openings of the bretzel, but they *mold* the remaining portions of the dough so as to produce the bretzel appearance. The cutting part involves not merely cutting, but also getting proper clearance of the internal scrap—a point wherein Fowler & Rockwell, with all their skill and knowledge of the art, utterly failed; the molding part involves all the elements necessary to give the rounded form and the characteristic peculiarities of a bretzel as distinguished from other products of the bakery; and the cutting parts and molding parts must be so joined together as to leave no fissure or crevice, however small, into which the dough can be forced by the most powerful pressure—another point where Fowler & Rockwell failed. The problem of combining all these parts so that they would work properly together, both cutting out the stock and making up the article out of it, proved, in practice, to be a very different problem from that involved in merely making a cutter or merely making a die.

After the New York machine had exhausted the combined ingenuity and mechanical skill and knowledge of Crawford, and Fowler & Rockwell, without reaching success, it was sent to Columbus, Ohio, worked upon there by Crawford and Huber for several months more in an at-

tempt to improve it, tried, found inoperative, and abandoned. (p. 167.) It was, then, at great labor, trouble and expense, altered and reconstructed, and, as thus reconstructed, may be termed the *third* Lampert & Huber machine. The alterations so made are described on pp. 167, 168. And finally, from all the knowledge and experience thus obtained, the *fourth* Lampert & Huber machine was built by the Scioto Valley Machine Co., with considerable further alterations, and was finished in February, 1882, and found to be a perfect success—"the astonishment of the baking fraternity and the admiration of mechanical experts." (pp. 169-172.) The work which was begun in 1872 was finished in 1882, after almost incredible labors and discouragements.

Such a history shows that the invention of a machine to successfully make bretzels by dies was not an easy task, even where two opposing dies were employed, but a task requiring indomitable perseverance, large pecuniary resources, and the highest inventive and constructive skill; all other efforts, wheresoever and by whomsoever made, were failures; this alone reached the goal of success.

But if it was difficult to produce a bretzel-machine operating with two opposed dies, how much more difficult to produce the result with a single die!

The idea of the single-die machine was conceived originally by Earhart, in 1879, while experimenting with the first Lampert & Huber machine (p. 125, Ans. 4), and was subsequently wrought out and reduced to practice by the combined exertions and inventive thought of the three complainants, Earhart, Crawford and Butler (p. 77, Ans. 6; p. 128, Ans. 10, 11; p. 159, Ans. 166, 168; p. 175, Ans. 11; p. 186, Ans. 4, 6). The machine was completed and put into

practical use in May, 1882, (p. 127, Ans. 7). The application for a patent was filed July 6, 1882, and the patent in suit issued March 20, 1883. (See patent, complainants' Exhibit B.).

The idea at first conceived by Earhart was, simply, "that a bretzel-machine could be made to cut out bretzels *on a flat surface*, at a cost comparatively small compared with that of the Lampert & Huber machine," (p. 125, Ans. 4), and, before anything was attempted in the way of an embodiment of the plan in model or drawings, the subject was talked over between Earhart, Crawford and Butler, (same answer), so that their several ideas became blended together undistinguishably from the very beginning. During that first consultation, Earhart made a drawing intended to show the die which they were jointly discussing, in which drawing *he failed to get the end and side creasers, to properly make the twist of the bretzel* (same answer). Afterwards, and during the same year, 1879, he "made other drawings, endeavoring to get at what would make a proper die for the purpose, but *did not get the creasers and grooves in such shape that would make the proper die and show the twist.* These small drawings were thrown aside as useless." (Same answer.) In March, 1880, they "partially made another drawing, which was completed within a few days thereafter, showing the face of the die with the creasers substantially as shown in the patent sued upon," (pp. 125, 126, last part of same answer.) This drawing was preserved and is in evidence as "Complainants' Exhibit First Sketch," (p. 126, Ans. 5.) It shows "the shape of a bretzel," "the bows, the loop, twist, and the off-bearing internal scrap passages." (p. 126, Ans. 6).

In March, 1881, Earhart made another drawing showing the

cutter-frame, dies complete, the springs, clearers and the base substantially the same as those now used in making a cutter or machine under the patent here sued upon. This drawing was taken to a draughtsman and a copy made from it by him, *which was intended to be used in applying for a patent" on the new machine.* (p. 126, Ans. 7.) The copy made by the draughtsman, for the purpose aforesaid, is in evidence marked "Complainants' Exhibit, March 1881 Copy." (p. 126, Ans. 7.) This copy, made by said draughtsman, was sent to the complainants' patent solicitor, Mr. Edson, at Washington, D. C., and "*from it and the accompanying description the drawings and specifications were made, which accompanied the application for the patent.*" (Same answer.) Mr. Edson was retained for this work about January, 1882. (p. 288, Ans. 13.) In March, 1882, a model was ordered, which was finished a few weeks afterwards, and was also sent forward and accompanied the application for the patent. (p. 126, Ans. 7.) Then followed the completion of the machine for practical use in May, 1882, and the application filed July 6, 1882, as already stated. In addition to the three drawings mentioned, there were two or three small sketches made in 1879, and possibly in the forepart of 1880, in endeavoring to get creasers to show the twist (p. 127, Ans. 8).

The *date* of the March, 1880, sketch—"Complainants' Exhibit First Sketch"—is fixed by a letter from Crawford to Earhart, printed on pp. 191-194, and in evidence as "Complainants' Exhibit Crawfords' March, 1880, Letter." The March, 1880, sketch was *commenced by Crawford*, in New York, (where he was then assisting Fowler & Rockwell in getting up the "New York Machine" under the Lampert & Huber patent,) transmitted in said letter by

mail to Earhart, and *completed* at Columbus, Ohio, *by Earhart.* (p. 143, Ans. 69; p. 160, Ans. 171.) "The parts left unfinished by Mr. Crawford were the lines showing the twist and creasers," (p. 143, Ans. 70,) and are more particularly set forth by Earhart on pp. 143-149, Answers 70-110.)

The *date* of the March, 1881, sketch, (original,) is fixed by the fact that one of Mr. Earhart's sons made it at his direction and was soon afterwards attacked with nervous prostration and spasms, such attack commencing sometime during the month of March, 1881. (p. 149, Ans. 112.) The original drawing thus made was left with the draughtsman by Mr. Earhart, who, after this suit was commenced, tried to recover it, but the draughtsman had moved away and no trace of him or the drawing could be found. (pp. 149, 150, Ans. 113.) The merely mechanical character of the work done by his son, under his directions, is shown by Answers 114-120, pp. 150, 151.

The model of March, 1882, was not the first attempt to embody the invention in a model. (Earhart, p. 157, Ans. 158.) What other attempts were previously made does not fully appear in the evidence, but it does appear (see p. 193, Ans. 53, 54, 55,) that Crawford had had a tin pattern made in New York, in the spring of 1880, from sketches drawn by himself, and that the drawing of March, 1880, sent by him to Earhart and completed by the latter, was drawn from said tin pattern; also that a rough wooden die was made shortly after the making of the March, 1880, sketch (p. 128, Ans. 12;) also that a metal die, in evidence as "Exhibit Brass Cutter," was made some time previous to commencing work on the full size machine. (Same answer).

In all this history, commencing with the crude and im-

perfect conception in 1879, and ending with the completed and perfected practical machine in May, 1882, there is abundant evidence that the invention was a work of gradual evolution. During all this long period, the study and experimentation upon this invention were continuous, and went along hand in hand with the labor of experimenting upon and perfecting the Lampert & Huber machine. Earhart says: "During the years of 1879, 1880 and 1881, we were *experimenting with dies*, and with the machine purchased of Lampert & Huber, to perfect and develop their patent machine, *as well as the patent machine sued upon in this cause*." (p. 127, Ans. 7.) Again: "While we were employed in developing and improving the Lampert & Huber machine, *we were at the same time developing and learning how we could make a practical machine as represented in our patent sued upon, which was in contemplation and was a matter of study at the same time. They were carried along together until each was made a perfect working machine*." The whole field was "new and untried," with "nothing to guide" them but their own "broad judgment and the failures of those who had undertaken to build bretzel-machines before" them. (p. 135, Ans. 22; and see also p. 158, Ans. 163).

The *cost* of developing the invention here in controversy was great. Exclusive of all the experimental work on the Lampert & Huber machines, in which many of the same problems had to be studied and solved, the cost of the flat-die invention alone was about $900. (p. 130, ans. 14). Inclusive of the abortive New York machine, where the problem of dies was directly in process of solution, the cost was about $4,900. (Same answer). And inclusive of all the work on the Lampert & Huber machines, which was,

throughout, not only a study of the peculiar problems relating to cylinder machines but also of all the problems involved in the use of dies for making bretzels, the cost was $30,000, (p. 130, ans. 13),* and this is a low estimate. (p. 134, ans. 20).

The *time and labor* spent upon the invention were very great, and, if we include the undistinguishably intermingled study and experimentation upon the same problems in the Lampert & Huber machine, were enormous. A whole "carload" of "the *debris* of abandoned bretzel-machines and experiments can be found scattered throughout" the complainants' establishment. (p. 177, ans. 18). Earhart was asked by defendants' counsel, (p. 158, C. Q. 164) if, exclusive of work done on the Lampert & Huber machines, he had spent one day on the development of the invention here in controversy *prior to completing the sketch of March, 1880*, to which he replied:

"Yes, much more than that. I spent days—day after day—I don't know how long, studying the original Lampert & Huber machine to make one to cut on a flat surface like our patent sued on." Crawford, testifying to the joint work on the Lampert & Huber invention and the invention here in controversy, says that it took, in the years 1879, 1880 and 1881,

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*NOTE.—Appel spent $1,000. in time and money, in his abandoned experiments. (p. 196, ans. 7). Keller & Myers spent $28,500. in their unsuccessful efforts to produce a practical bretzel-machine. (p. 198, ans. 3). The complainants spent $30,000. besides what Lampert & Huber had spent in the six or seven years of their previous work (see p. 177, ans. 19), and finally attained the desired result. It thus cost over $60,000. to solve the problem of making successful bretzel machines.

"Nearly all of the working days, all of the Sundays, and nearly all the sleeping hours. It was an incessant occupation during the days and nights of these years. It was not only an occupation, but infinite toil, exhausting not only the mind, the body, but the pocket as well, from the effects of which I have not as yet recovered, and physically never expect to. (p. 179, ans. 27)."

The *inventive ingenuity* required to produce a die which would reproduce the appearance of a twist in the bretzel, was very great. *Appel* tried it, *for five years*, and was utterly defeated in his efforts *by the difficulty of getting that appearance of a twist.* (Appel, p. 195, ans. 4—8). It will be remembered that the similitude of the twist is formed by the *creasers*. *Rumsey*, one of defendants' witnesses, tried it, in February, 1882, at Pittsburg, and, after putting creasers in, had to take them out, throw the die away, and abandon the attempt. (*Rumsey*, p. 41, ans. 1; *Krebs*, p. 49, ans. 10—18). Fowler & Rockwell tried it in the New York machine, in 1880, and only succeeded in getting creasers which would cut the bretzel to pieces, would cause the dough to adhere, and would not discharge the internal scrap. Fowler & Rockwell were skilled manufacturers of bakers' machinery, and Rumsey's firm, S. S. Marvin & Co., were skilled bakers, yet all their skill and knowledge in the art availed them nothing. *They had the idea of accomplishing the result by creasers, but, even with the idea in their possession, they utterly failed to reach success, and their efforts passed into the limbo of abandoned experiments.* Nothing could show more clearly than this, that the invention does not reside merely in the suggestion, but that serious latent mechanical difficulties were involved, which it required great inventive ingenuity to overcome. The mere fact that the world had been making bretzels for more than a thousand years by hand, without attempting the

use of dies or other machinery; that all attempts, previous to that of these complainants', to work by machinery, had failed; that, in this country alone, $60,000. are known to been spent in the various efforts before success was achieved; that the complainants' were the first to achieve success; and that the finally successful invention was obtained only by the continuous labors of ten years; ought to settle the question of *invention*, as contradistinguished from mere skill and knowledge in the art, whatever opinions inexperienced or interested persons may now form, after the event, respecting the obviousness of the plan and the ease or difficulty of reducing it to practice.

But the statement would not yet be complete, without showing the enormous *advantages* of the invention, as compared with the old process of hand-labor.

1. The old process was "slow, tedious and uneven work." (Rumsey, p. 35, ans. 6). To make one barrel of bretzels by hand, in a day, is considered fast work for an expert workman, (p. 74, ans. 10); whereas, four men, with an ordinary cutter having six dies, and running it at ordinary speed can make from 150 to 200 barrels per day—*or, in other words, the product, per man, is fifty times as great as by hand labor*! (p. 74, ans. 11). And even this great product can, by increasing the number of dies, be *doubled* without employing any more men, (same answer), and, by increasing the speed of the machine, can be *tripled*, (pp. 135, 136, ans. 24), *so that "the production would be so great that it could not be taken care of, that is to say, that no shop in this country has the capacity to prove, boil and bake them, and that men enough could not get around the machine to handle them."* (Same answer).

2. This enormous capacity of production reduces the

cost of manufacture from 40 to 50 per cent,—about 4½ or 5 cents per pound. (p. 75, ans. 14). "The cheapening of the cost of manufacture one half the cost of making hand-made bretzels has enabled me to use much better material in making bretzels, and to sell them at a much lower price than hand-made bretzels," so that *the public* "*obtain an article of better quality at a less price.*" (*Wilson*, p. 201, ans. 4).

3. "In making a hand-made bretzel it requires a room of high temperature. The hands employed in the making of the goods are constantly perspiring, which perspiration is worked into the bretzel. *Bretzels made by machinery are not touched by hand in any way, from the time the dough goes into the machine until they are baked and ready for use*, thus making them a *more wholesome article of food.*" (*Wilson*, pp. 201, 202, ans. 4).

4. In the manufacture and transportation of bretzels, there is about one-third more breakage in hand-made than in machine-made bretzels. (*Gohl*, p. 118, Ans. 9). This fact is undoubtedly due, in part, to the unevenness and uncertainty of hand work, as contrasted with the even, uniform character of the machine-made articles, and, in part to the fact that the bretzels made on the machine here in controversy have all their parts lying in one plane, without projecting knobs, ends, or arms. (See p. 75, Ans. 13; p. 161, Ans. 172). Where bretzels are made uneven in the size and diameter of their parts, they bake unevenly; *while the larger parts are baking the smaller parts char or burn*, rendering them brittle, soiling the color, giving them an unpleasant taste and injuring their sale. (See p. 286, near bottom, and p. 287, at top).

5. The introduction of bretzel machines, and the con-

sequent improvement in quality and the reduction in cost of bretzels, has enormously increased their consumption in this country, so that the market demand for them when Mr. Earhart was on the witness stand was ten times as large as when they first commenced manufacturing bretzels for the trade. (p. 132, Ans. 16). Until that time, the trade was confined nearly altogether to beer saloons (p. 133, Ans. 18), but since the introduction of machine-made bretzels they have become a commercial article and are sold generally by the grocery tr le. (p. 132, Ans. 16; p. 201, Ans. 3). The machines are "destined eventually to revolutionize the bretzel business," was the opinion of Mr. Wilson when he first saw them (Ans. 3, p. 201); and the revolution then predicted would seem to have been already accomplished.

VI. The Defenses.

The Defenses are:—

First, The old "stock" defense that it required no invention—that everybody skilled in the baker's art knew so much that he could have done the same thing long ago if he had felt any interest in doing it.

Second, That the invention was anticipated—

1. By Lambert & Huber, in the cylinder machines hereinbefore referred to;
2. By Rumsey, at the bakery of S. S. Marvin & Co., Pittsburgh.

As to the Allegation of No Invention: This defense has already been sufficiently answered in the dis-

cussion of the history of complainants' invention, and it might well be dismissed without another word. It rests, as a matter of course, upon mere opinions, formed, "after the event," by certain of defendants' witnesses. These witnesses are *Roth* and *McMahon*, (*infringers* and actual although not nominal defendants;) *their workman, De Tamble; their sub-tenant, Durkee; Rumsey*, (*an infringer*); *his workman, Krebs; Nichols*, a model-maker, who never made a pattern or die for a bretzel-machine, (p. 229, Ans. 20), never saw a bretzel-machine (Id. Ans. 21), never saw bretzels made by machinery (Id Ans. 22) and never saw the process of making bretzels by hand (Id Ans. 24), *and who, on cross-examination, testifies that the history of this invention indicates the exercise of "inventive genius of a high order"* (Id Ans. 26); and *Callahan* and *Sawyer*, two bakers, of whom Sawyer never made bretzels (p. 232, Ans. 3; 234, Ans. 16), never saw dough prepared for use on a bretzel machine, (Id Ans. 17), never saw them made by machinery (Id. Ans. 4, p. 234, Ans. 16), and knows nothing about the subject (Id Ans 18),—while Callahan's knowledge of bretzel machinery is limited to one single instance of seeing, as an experiment, bretzel dough *cut* with a cracker cutter, as though, forsooth, there could be any doubt that a cracker cutter, or any other kind of cutter, would *cut* bretzel dough. (p. 248, Ans. 9; p. 249, Ans. 12; p. 250, Ans. 26; p. 254, Ans. 60, 61).

Of these nine witnesses, the testimony of Nichols (p. 229, Ans. 26) is squarely against the defendants on this point; while the testimony of Krebs, Sawyer and Callahan is entirely indirect and inconclusive, neither of them being asked for an opinion, nor testifying to an opinion,

directly on the point. *Krebs* stated only that he thought the difference between cake-cutter, cracker-cutters and bretzel-cutters is a difference in shape (Ans. 10); and that the principle is the same in some of them,—intimating that he refers here to the scrap-clearers particularly (Ans. 12). In answer to Question 11, p. 47, he declined to say that he regarded the bretzel-cutter of Marvin & Co. as being an old device, and instead, replied "This is the first I ever knew of for making bretzels," while in cross answers 11 to 18 he testified that neither he nor his employers could perfect the dies they had in use. *Sawyer* testified mainly about doughs; said that bretzel dough is *made* the same as hard cracker or pilot bread dough, and *used* the same as soda cracker dough (Ans. 5); described pilot bread dough, (A. 44), showing that there is no *yeast* used in it; then swore that yeast *is* used is in it (Ans. 45), but that "*it don't rise any*," only while baking (Ans. 46); and thought that a die which would *cut* one kind of dough would *cut* another (Ans. 13). **Callahan* testified (p. 252, Ans. 43) that pilot bread has no yeast in it, thereby corroborating Gohl (complainants' witness) and contradicting Sawyer; also that the same dies cannot be used on all kinds of dough (Ans. 48); distinguishes hard doughs from soft doughs (Ans. 52); classes bretzel dough with the hard doughs (Ans. 56); and says that he thinks that any die which will cut hard doughs will cut bretzel dough (Ans. 57).

It is evident from this *resume* that the testimony of

***NOTE.—*Gohl*, an old experienced bretzel-maker testifies, (p. 120, Ans. 20, 21), that *cracker* dough has no yeast, while bretzel dough, biscuit dough, and bread dough, all are made with yeast. Every old sailor and soldier can testify that hard-tack (pilot bread) is not raised, but is flat as as a shingle and generally about as hard.**

Krebs, Sawyer and Callahan is of no consequence and may be dismissed without further consideration, so far as concerns the point now under discussion; while the testimony of Nichols weighs for the complainants.

Of the remaining five witnesses mentioned, Roth, McMahon and Rumsey are all infringers of this patent, and their present alleged opinions are of no weight in view of that fact. "No rogue e'er felt the halter draw, with good opinion of the law." In view of the enormous advantages of the bretzel dies, hereinabefore set forth, how happened it that these manufacturers of bakers' machinery *never made a bretzel cutter till after the complainants' invention*, but are willing *now* to to spend thousands of dollars, in the costs of this suit, to secure the privilege of making them in the future! If they always knew enough to make bretzel dies, *why didn't they make them?* Both of these parties, Roth & McMahon, and Rumsey, *have been traced directly to complainant's shops at Columbus, before either of them ever made a bretzel cutter*. *Roth* was there about the time his firm made the bretzel cutter for Steckel Bros. (p. 289, Ans. 15, p. 57, Ans. 17–19). *Rumsey* was there both *prior* and *subsequent* to June, 1881, when his firm first began to use crude, imperfect bretzel cutters (p. 287, Ans. 8; p. 84, Ans. 7; p. 35, Ans. 6). Both of them may have seen the complainants' models, or drawings, or had the invention described to them, at the time of their visits. It is highly probable that Steckel was there also, or else that he got the idea of the die from Roth, who *had* been there; for, although Roth alleges (p. 55, Ans. 18; p. 58, Ans. 25-36) that Steckel brought him a cast of the die to work from, yet it nowhere appears where Steckel got the idea, *and the defendants have been very careful not to put him on*

the witness stand to tell the story. It is evident that the testimony of Roth, McMahon and Rumsey, to the effect that, in their very *disinterested* opinions, a bretzel die involved no invention but only mere skill and knowledge of the art, comes burdened with a very heavy load of antecedent improbabilities and of adverse facts which are not even attempted to be explained.

As to the other two witnesses on this point, De Tamble and Durkee, both are machinists, having no practical knowledge of bretzel making, or of doughs, or of the baker's art,—one being Roth & McMahon's workman, and the other their sub-tenant. *De Tamble* made the first bretzel cutter he ever saw (p. 268, Ans. 21)—probably the Steckel cutter, made at Roth & McMahon's shop—but he made it from a pattern, or, rather, his part of the work consisted merely in *sharpening up the castings* (Id Ans. 23). He, of course, found no invention in making a casting from a pattern, nor in sharpening up the casting, and this was the extent of his experience and knowledge on the subject, and fully explains his ready-made opinion given for the benefit of his employers and at their instance. *Durkee's* testimony is simply *funny*. He knew what a bretzel was (Ans. 9, 10), and, apparently as a preparation for testifying, (see Ans. 20), went to see a bretzel machine work the day before he testified (Ans. 15, 16), which was the first time he ever saw one (Ans. 17). He had made cutters for cakes, buiscuits, crackers, etc., but never a bretzel die (Ans. 25), but he was as ready with his opinion as if he knew all about the subject. His opinion was, that any good machinist could make a bretzel die *in two days* without the exercise of invention, simply from being shown a bretzel *and at an expense of about ten or twelve dollars!* (Ans.

27, 28). When this ignorant opinion is compared with the experience of Appel and the complainants, and with the general incredulity of the trade, prior to complainants invention, as to the physical possibility of making bretzels by machinery, its worthlessness will be manifest. But the witness proved himself to be unreliable in his facts as well as his opinions. In cross-examination, in order to ascertain his qualification to form or express an opinion about what did or did not involve invention, he was asked if he ever took out any patents himself (Q. 50, 51), in answer to which he swore that he was such a great inventor that *he took out a patent for his own inventions about every month* (Ans. 51, top of p. 248)! The complainants' counsel was somewhat incredulous about this, and sent to the Patent Office to find out the facts, when it came out (see p. 299) that Mr. Durkee had taken out only five patents in ten years! *One twenty-fourth part* of Durkee's testimony as to this fact was true—twenty-three-twenty-fourths were false. Making the same allowance for his opinions as for his facts, it would appear that his opinion on the point in question is only one-twenty-fourth part of an opinion, after all! His estimate of the expense of making the invention—ten dollars—as compared with the facts experienced by Appel and others, requires a far greater allowance for error.

Not an expert, familiar with the patent law and with what the courts consider to be the indicia of invention, has been called in behalf of defendants.

The testimony of Roth and McMahon, even as to facts, is not above suspicion. *Crawford* says that McMahon lied to him about this infringement, and, afterwards, when confronted with the facts, admitted the lie (p. 178, Ans.

24), although McMahon (p. 223) tries to partly deny and partly explain it. *Ruger* testifies (pp. 209–210 Ans. 10–12 p. 212, Ans. 21, 22) that Roth tried to lead him into infringement, and represented that this suit had been "all decided, and they were all clear of it," but that, *through want of confidence in Roth's word*, he declined to enter upon the manufacture, (p. 210, Ans. 13), which statement, Roth, although called afterwards as a witness (see pp. 220–222) made no attempt to deny or explain. Roth also (pp. 53, 54, Ans. 14) put in evidence two cracker cutters for cutting the characters B and &, as old cutters which had been in use, to his knowledge, since about 1866 or 1867. The question which he was answering was—

"Q. 14. If you have any *old dies or cutters* with you, please produce and *identify* them?"

To which question he answered:

"A. I here produce two dies; one for cutting crackers and cakes into the shape of the letter B, and the other for cutting them into the shape of the character &. *Both of these have been used to my knowledge since about 1866 or 1867—I think that far back;* and I know they were made and in general use in 1870. Dies on this principle were made in many other shapes as far back as these."

The two "old dies or cutters" thus produced were put in evidence as Defendants Exhibits 14 and 15. They were afterwards examined by complainants' experts, who unhesitatingly pronounced them comparatively new dies, and said they could not have been in use for any length of time (see, Dodge, pp. 95, 96, Ans. 16; Robertson, pp. 102, 103, Ans. 6). Robertson even found *filings* in them (p. 103) and stated that the dies appeared "as if they were made for the purposes of this suit." *Then* Mr. Roth came back to the stand and admitted that these two exhibits were *not* old dies, but that they were made "to *rep-*

resent old styles of cutters,' (p. 220, Ans. 3); and he proceeded to swear that, instead of knowing of such old styles of cutters from 1866 or 1867, as he had testified before, he had, in fact, known of and made such cutters in 1859, and they were in use long before that, (p. 221, Ans. 7). There is, to say the least, a looseness about this style of testifying that does not commend it or the witness to favorable consideration, and suggests that Ruger probably had good reasons for not placing much confidence in Mr. Roth's word (see p. 210, Ans. 13), and the fact that McMahon knew of no such thing, and saw no such thing, when he first went into business with Roth in 1875, (p. 223, Ans. 6), emphasizes the suspicion.

Passing now from mere opinions, which, as we have seen, are not of a character to make out defendants case on this point of invention or no invention, let us now come to the actual state of the art, as it existed before the complainants invention.

Irrespective of the alleged cutters, B and &, (Deft's Exhibits 14 and 15), crackers, cakes and biscuits had before been cut out by the use of cutters, and had, at the same time been marked or ornamented in various ways, some of the forms representing letters of the alphabet, numerals, animals, hearts, lozenges, leaves, birds, &c., &c., (p. 37, Ans. 12; p 62, Ans. 7; pp. 230, 231, Ans. 30). All these things were well known—every child who ever ate a "horse-cake" was familiar with them—but they were of no assistance whatever to Appel, Keller & Myers, Fowler & Rockwell, Lampert & Huber, or these complainants, in showing how to invent or make a bretzel machine, nor did they ever lead anybody to make a bretzel machine prior to the date of

complainants' invention, although thousands of bakers would have been glad to know the secret.

As to dies for making the letter B and the character & if they ever were in existence, the same remarks may be made, and, we submit, would be conclusive against their validity as defenses. *But the whole story of their prior existence rests upon Mr. Roth's word*, which, as we have seen, Mr. Ruger did not regard as reliable (p. 210, Ans. 13), and justly regarded as unreliable, since Roth was lying to him about the very matter referred to in Mr. Ruger's said answer No. 13, as we have already shown. Roth at first testified that these two dies, put in evidence by him as Defendants' Exhibits 14 and 15, were old dies actually in use as early as 1870 and that similar dies were known to him as early as 1866 or 1867, and then afterwards admitted that the Exhibits were new dies made only "*to represent*" old ones; and at first testified that he had known of such dies as early as 1866 or 1867, and then, at a later stage of the case, testified that he had not only known but *made* such dies in 1859, eight years earlier than the date first suggested by him; and that similar dies were known before that; —so that his testimony is shown not only to be unreliable generally, but, *on this particular point*, to be loose, conflicting, and unsatisfactory, even if not containing a direct *suggestio falsi*.

Again: if such dies were made by Mr. Roth in 1859, *what became of the dies and of the patterns from which they were cast?* When he comes on the stand in April, 1884, to explain that these Exhibits were not old dies, but made merely to represent old dies, (pp. 220, 221), he feels obliged to bolster up his statement a little, and so he tells us that

these Exhibits were made from *old patterns* "*first made in 1877.*" (Ans. 4, 5, 6). Why did he not mention these old patterns in his *first* deposition? Why was it necessary to make new patterns in 1877, if, as he says, he had been making just such dies for years prior to that date? Why were not his business partner, McMahon, and his workman, De Tamble, who were afterwards examined as witnesses for defendant, asked to corroborate this story about the alleged patterns, for they must have known of them if they ever existed? If Roth had been making such dies since 1859, how happened it that his partner, Mr. McMahon, when he first went into business with him in 1875, saw cake cutters, cracker cutters, &c., "just like these models, *except that they did not have the letter B and the character &.*" (McMahon, p. 223, Ans. 4, 5, 6)? And why are these alleged patterns not offered in evidence nor produced for the inspection of complainants' counsel, but carefully kept out of sight? Did defendants' experience in the demolition of their story about the exhibits being old *dies*, render them cautious about putting in the alleged *patterns*, for fear that they, too, if produced, might show evidence of recent manufacture? It is very curious, that, with the alleged old patterns in their possession, and with Roth, McMahon and De Tamble all on the witness stand, they neither produced *the patterns* nor *any die* made from them except those made for the purposes of this suit; nor *any person who ever purchased or ordered* such dies; nor *any person who ever used*, or *knew of the use of such dies*, except Roth; nor asked McMahon or De Tamble anything about them; but left the whole story to stand or fall upon the unreliable word of Mr. Roth, already gravely attacked in the testimony of

Ruger and the destruction of the "old die" story! In order to avail the defendants, this defense must be made out *beyond a reasonable doubt* (*Coffin* v. *Ogden*, 18 Wall. 124). We submit that it is not so made out, and that it is exceedingly doubtful if any letter B or character & was ever made, *by a single die*, before the date of complainants' invention. Cakes and crackers in the shape of the letter B, or even the character &, may have been made before; but that does not prove that they were made *by a single die*. Every cook knew how to cut out pie-crusts and cakes with a cutter and then ornament their edges with a crimper or other instrument—and how to cut out the external form with one instrument, and internal openings with another—and they may have even cut out cakes and impressed marks upon them by one and the same instrument; but that the letter B or the character & was ever made by a single cutter or die, or by any means whatever, is not proved, nor is the prior existence of dies like defendants' Exhibits 14 and 15 ("B" and "&") established by evidence such as the law requires to support the defense.

But, even if the prior existence of dies like Defendants' Exhibits 14 and 15, *were* established, it would not amount to a defense, for reasons that we have already shown, and for another reason which we will now proceed to show. And, before entering upon this discussion, the Court will bear in mind that one of the many causes which made Fowler & Rockwell's New York Machine a failure, was that the small hole or opening was so small that the dough, in certain conditions, would not go through it, but clogged and rendered the whole device inoperative, (p. 167, eleventh to thirteenth lines from the bottom). By examining the

New York Machine, it will be seen that this small opening *was at least half an inch in diameter.*

Coming, now, to Defendants' Exhibits 14 and 15, we find that the holes therein are all very much smaller than the inoperative hole in the New York Machine, and, even if the Exhibits were enlarged to the size of bretzel dies, as Mr. Robertson shows, (pp. 109, 110, Ans. 26, where he gives the exact measurements when so enlarged) the holes would still be smaller than the useless holes were in said New York Machine. It follows, that, if these alleged dies were enlarged to the size of bretzel dies, the holes would still be too small for practical service.

But we have no right to consider the supposed enlarged dies, for they are not even pretended to have had an existence—we are dealing only with the small dies which Mr. Roth says *did* exist, and upon which, as practical machines capable of cutting out not only the external form of the letter B and character &, but also of cutting out and removing the internal scrap, and, in the case of the "&," molding the surface of the cake, the defense must stand or fall. Were these dies, if they ever existed prior to complainants' invention, capable of practically so operating?

The evidence shows conclusively that they were not. Both of them were tested by complainants' experts, Mr. Dodge and Mr. Robertson, at Gohl's bretzel bakery in Washington, D. C., and it was demonstrated by actual trial that neither of them would cut or remove the internal scrap, but the holes, after cutting a few times, filled up with dough, and they became in effect solid punches. (Dodge, pp. 90, 91, 92, 93, Ans. 9, 11, 12, 13; Robertson, pp. 101, 102, Ans. 5). Although this testimony was given in March, 1884,

and the defendants afterwards took nine depositions in reply, running from April, 1884, to the 18th day of October, 1884, *yet they did not even attempt any reply as to the proved impracticability of these two exhibits for the work for which they were said to have been intended.* In the tests made by Messrs. Robertson and Dodge, although the instruments at first, for two or three strokes, cut out the holes in the dough, *yet in no instance did the internal scrap pass up through the die-holes and discharge, but it simply stuck there and accumulated* till it clogged the dies and forced them to operate simply as solid punches. (Dodge, Ans. 12; Robertson, Ans. 5). They both failed, just as the New York Machine failed, and from one of the same causes.

This testimony, unanswered, disposes of the whole defense, so far as these alleged prior cracker dies are concerned. Even if they were ever made, which is doubtful, and if they were ever sold to any bakers, they were probably thrown away as useless and inoperative after a trial of them, and hence, if for no other reason, no baker is called to substantiate their alleged use.

But even if they had been made and sold, and proved operative for their purposes, they would not anticipate a bretzel die, nor show that the bretzel die here in controversy involved no invention.

As to the letter B, it involved no markings, but simply the cutting out of the external form and the internal holes, and hence contained no creasers of any description whatever.

As to the character &, it shows only *two* creasers, while the die in controversy has *five*. The creasers in the alleged

die, "&," do not make marks which represent one "arm" of the cracker as *twisted around* the other "arm," but marks which, on the contrary, represent one "arm" as simply *lapped over* and *pressed into* the other "arm." This is not at all the invention set forth in the first two claims of the patent here in suit, nor does it, even if practically operative for its purpose, (which it is not), prove that no inventive ingenuity, thought, and experimentation, were necessary, to produce the dies in suit.

Neither of the dies, Exhibits 14 and 15, makes *three* holes in the cracker, as in a bretzel. Neither of them produces the *external form* of a bretzel. Neither of them produces the characteristic twist of a bretzel. Neither of them has its molding bed or groove so formed as to impart the rounded cylindrical form to the body and arms, as in a bretzel. The world might have known and used them both for a thousand years, as Mr. Roth says it did know them for more than twenty years, without learning from them how to make a bretzel die. Both Dodge and Robertson swear that, in their opinion, even assuming these cracker dies, Exhibits 14 and 15, to have been made and used before complainants' invention, yet the complainants' bretzel dies involves the exercise of invention, as distinguished from mere skill in the art. (Dodge, pp. 97, 98, Ans. 23; Robertson, pp. 105, 106, Ans. 10). They thus serve neither the purpose of anticipating the bretzel die here in controversy, nor of bringing the art up so near to this bretzel die as to leave no room for invention between.

The law, as to this part of the defense, is clearly stated in *Hoe* v. *Cottrell*, 18 O. G. 59, 61, *Loom Co.* v. *Higgins*, 105 U. S. 591, and *Clough* v. *Gilbert & Barker Mfg. Co.*, 106, U. S. 178.

In *Hoe* v. *Cottrell*, the Court said:

"The fact that in the multiplicity of printing presses *this combination had not been hit upon*, and that, when it was introduced, its utility was universally recognized, and that it is plain that in order to make the combination *some changes were necessary in any machine or drawing which has been shown*, satisfy me that to produce this result required changes which the mere skill of the mechanic would not suggest, and that the work was practically more difficult than now seems to the theorist to have been necessary."

In *Loom Co.* v. *Higgins*, the Supreme Court said:

"It may be laid down as a general rule, though perhaps not an invariable one, that *if a new combination and arrangement of known elements produce a new and beneficial result, never attained before*, it is evidence of invention."

In *Clough* v. *Gilbert & Barker Mfg. Co.* a lamp was set up in the answer as an anticipation of the patent, and proved in the case, which was so constructed as to be capable, *without any reconstruction, and only by a slight adjustment of one of its parts differently from its designed adjustment*, of doing the identical thing done by the patented lamp, by the same means and in the same manner; but the Supreme Court, in a careful and elaborate opinion, held it to be no answer to the patent. *Both lamps had slotted burners and a surrounding sliding tube;* the patented lamp was designed to slide the tube far enough to open a secondary supply of gas, whereas the prior lamp was designed to slide the tube only far enough to control the primary supply of gas, *but the tube was capable of sliding farther so as to accomplish the result of the patented lamp.*

On this state of facts, the Supreme Court said:

"that if that burner is used now in a way *in which it was never designed to be used*, and is not shown to have ever been used be-

fore Clough's invention, *it may be made to furnish a supplementary supply of gas.* Its structure was such that, to give full effect to *its* mode of operation, the surrounding tube did not require ever to be raised so high as not to be in contact with the cone. As it was raised from its lowest position, the slit opened, and when the slit was opened to its full extent the tube was still in contact with the cone; and there was no orifice between them. *Any further raising of the tube was accidental and not a part of the law of the structure.*"

Concerning this case, *Walker* (Walker on Patents, § 68) remarks:

"Novelty is not negatived by anything which was *neither designed, nor apparently adapted, nor actually used, to perform the function of the thing covered by the patent*, though it might have been made to perform that function by means not substantially different from that of the patented invention. This rule rests upon the same reason as the rule of the last section, and is even more favorable to patents than that. *Though recently established, it is established thoroughly*, inasmuch as it is the result of repeated and careful consideration by one of the ablest patent jurists in the United States*, and inasmuch as, in establishing it, his associates on the Supreme Bench *concurred with him in reversing his own decision on the circuit.*"

In *Atlantic Works* v. *Brady*, 107 U. S. 107, the Supreme Court said:

"The design of the patent laws is to reward those who make some substantial discovery or invention, which adds to our knowledge and *makes a step in advance in the useful arts.* Such inventors are worthy of all favor."

In *Smith* v. *Dental Vulcanite Co.*, 93 U. S., the Supreme Court, in a discussion extending from the middle of p. 492 to the bottom of p. 497, reviewed this whole question in view of all the leading authorities up to that time (Oct. 1876), and held, that, when the other facts in the case leave the question in doubt, the fact that a device

*Mr. Justice Blatchford.

has gone into general use, and has displaced other devices which had been previously employed for analagous uses, is sufficient to turn the scale. This case, and the authorities therein cited, furnish the true rule of decision in the case now before the court.

In *Spill* v. *The Celluloid Mfg. Co*, 18 Blatch. 190, the patent sued upon was for applying *a well known bleaching agent* to xyloidine, a substance before supposed to be unbleachable. "It is my opinion," said an expert whose testimony is quoted by the court, "that a chemist would exhaust all other theories before he would think of ordinary bleaching agents for the purpose." The application of the known bleaching agent to this particular purpose was therefore held patentable.

In *Pearl* v. *The Ocean Mills*, 11, O. G. 2, Judge Shepley said:

"The change from the old structure to the new may be one which one inventor would devise with the expenditure of but little thought and labor, and another would fail to accomplish after long and patient effort. It may be one which one whose mind is fertile in invention will suggest almost instantaneously, when the skilled hand of the constructor will fail to reach the apparently simple result by the long and toilsome process of experiment. It may be one which, viewed in the light of the accomplished result, may seem so simple as to be obvious almost to an unskilled operative, and yet the proof may show that this apparently simple and obvious change has produced a result which has for years baffled the skill of the mechanical expert, eluded the search of the discoverer, and set at defiance the speculations of inventive genius. * * * Nothing has a greater tendency to prove that these changes involve some functional difference beyond mere mechanical perfection and adjustment, than the greatly improved result attending the change, when viewed in connection with the failure of the many experiments previously made to accomplish similar results by mere structural changes."

In *Penn* v. *Bibby*, 2 Ch. App. 127, Lord *Chelmsford* said:

"It would be an extraordinary fact if an invention of this kind so long wanted and of such great utility, should have been lying in everybodys way who knew anything of the construction of a water-wheel or grindstone, and yet should never before have been discovered."

AS TO THE ALLEGED ANTICIPATIONS.

These consist of—

1. The letter B and character &, hereinabove referred to.

2. The abandoned experiment of Hill, also hereinbefore referred to.

3. The Huber, and Lampert & Huber, dies.

4. The S. S. Marvin & Co. cutter.

These will be considered, first, with reference to the *first two* claims, which clearly involve the use of the *creasers* as elements of both claims; and, secondly, with reference to the *third* claim, which does not, in terms, mention the creasers, and may therefore be construed as a broader claim involving more particularly the "*three off-bearing internal scrap-passages*."

With reference to the first two claims:

1. The alleged prior dies or cutters for making the letter B and character &, have been so exhaustively discussed above, that we do not deem it necessary to occupy the court further with them. We have already shown that they neither anticipate the invention nor limit the scope of the patent nor bring the art so near to the bretzel-die as to leave no room for invention between.

2. The abandoned experiment of Hill has also been already discussed and, we submit, disposed of. That de-

vice consisted, as alleged, of two opposing dies (p. 24, Ans. 5). They are not produced, nor shown to be extant, nor is any model or drawing of them submitted in evidence or apparently in existence. The device never was completed (p. 33, Ans. 5). Nobody can tell how they operated, from the oral description of them given by Mr. Hill, but we can see, from Ans. 5, 6, p. 24, that they were entirely different from the invention here in controversy, having parts, such as "punches," not in the patented invention at all.* *They did not clear the internal scrap* (p. 26, Ans. 12), by means of off-bearing internal scrap-passages, but it "*remained on the flat surface and was carried off onto the apron, and by it to the dough-box*" (p. 26, Ans. 14)—an entirely different construction and mode of operation. The whole thing was "experimental" (p. 30, Ans. 2). They were operated *only when the parts were separate*, and by the aid of the hand, by first cutting out the bretzel, with one part, and then laying it in the former, another part, and pressing a third part upon it, (p. 24, Ans. 6). And the "whole invention, or attempted invention, was abandoned about 1876," (p. 30, Ans. 8), and has never been seen by its author since (Id. Ans. 7). It is clear that this attempt is no defense.

3. In Huber's, and Lampert & Huber's, dies, unlike the cracker cutters, etc., we find *bretzel-dies*. But they did not contain a single flat die, having off-bearing internal

*They had, according to Mr. Hill, p. 24, ans. 5, 6, "frames"; a "cross-head" of wood, with "iron bearings"; "cutters" of steel; "punches," of iron; "formers" and "clearers," of cast brass; "shafting," "gearing," and "connecting rods." How these parts were constructed or operated, no man knows from the evidence.

scrap-passages and the five creasers. In the Lampert & Huber machine, as patented Nov. 28, 1876, there were two opposing convex dies, arranged on two cooperating cylinders. The dies on the upper cylinder had *no holes at all*, and *only one creaser*, and therefore do not anticipate the invention in controversy. The dies on the lower cylinder had two large holes and one small hole, and *only one creaser*, and, for the same reason, do not anticipate the single flat-die invention. Assuming the machine to have been operative, to a greater or less extent, without further invention, yet it took both of its dies to make a bretzel, and neither could by any possibility do the work alone. In doing by a single die what before required two, the complainants made a new structure and produced a new result, which is all that the law requires to establish the fact of invention. This first Lampert & Huber machine showed *no end creasers* and, by adding all the interior creasers together, *there were only two of them in all.* The same is true of the machines patented to Lampert & Huber, May 6, 1879, and Feb. 10, 1880. In the latter two patents, *skeleton* dies were shown on one of the cylinders, attached to each other at their side-edges, and to rims or flanges on the cylinder at their ends and in the patent of Feb. 10, 1880, the small hole appears somewhat larger than in the two prior patents, but still not large enough for the most effective work.

In the Huber machine, patented January 27, 1880, *the dies for the first time show three creasers*, to wit, two creasers on the lower die, (which has no internal scrap passages), and one creaser on the upper die. *It had thus taken Lampert & Huber from 1872 to 1880 to get the three*

interior creasers, by distributing them *in both the upper and lower* dies; and they were yet without the idea of the two end creasers, and without the idea of assembling all the creasers in one die, or of operating with anything but convex dies rolling over the dough.

And their improved machine, when it came to be built by Fowler & Rockwell, in 1880, was found to be unsatisfactory, and, so far as the Fowler & Rockwell dies were concerned, inoperative. Three defects were found in the latter dies: first, the small hole was too small for clearance; secondly, the creasers came flush with the cutting edges and cut the dough into pieces instead of into a bretzel; and thirdly, the end creasers (added, undoubtedly, at the complainant's suggestion, as they are not found in Huber's or Lampert & Huber's patents) were made separately and set in, instead of being engraved in the solid metal of the die. The defects of the small hole and the flush creasers were justified by the Lampert & Huber patents, which all show the creasers as flush with the cutting edges, and also show the relatively small hole; although in double-die machines, the creasers may be made flush with the cutting edges on the same die, *when they work over a depression in the opposing die*, and yet do good work; whereas, in single die machines, the edges of the creasers *must always be below the cutting edges, because they work against a flat, uniform surface.*

Comparing the dies of the Huber and Lampert & Huber patents and machines with the die here in suit, it becomes perfectly evident that no one die in said prior patents or machines was the equivalent, or could be used as the equivalent, of the dies here in controversy, nor did any one

of said prior dies have all the parts enumerated and implied in the first and second claims here in suit.

4. The S. S. Marvin & Co. cutter had *no creasers at all.* After using it for awhile without creasers, *they attempted to put creasers into it but failed and had to remove them.* (Rumsey, p. 41, Ans. 1; Krebs. p. 49, Ans. 10–18). It is clear, therefore, that this device did not anticipate the first two claims here in suit.

With reference to the third claim: A different question arises under this claim, which, we submit, ought to be decided in favor of the complainants, on the evidence in the case.

This claim makes no mention of the creasers, but lays particular stress upon the "*three off-bearing internal scrap-passages or channels,*" in a "flat bretzel-shaped die," having "perforations for the expelling studs," and in combination with said studs. The gist of the claim seems to be the three off-bearing internal scrap passages, and we shall so treat it in the ensuing discussion,

We submit that no exhibit *except the S. S. Marvin & Co. cutter*, (which we will separately consider later on) contains the "three off-bearing internal scrap passages" of this claim.

The letter B and character & contained only two holes each, and, as hereinabaove shown, those holes were so small as to be utterly incapable of acting as off-bearing scrap-passages, but soon clog up and render the whole device a mere punch. This disposes of them as a defense to this claim.

Whiteley v. *Swayne*, 7 Wall, 685.

The Hill experiment is disposed of by the same authority, *Whiteley* v. *Swayne*.

The Huber and Lampert & Huber dies contained *three holes*, but they were not "*flat*" dies, (see claim 3), and therefore do not come within the expressed limitations of the claim. They were constructed to work on cylinders, with a rolling movement, where the dies here in controversy cannot be employed. This fact may or may not be important, according as the court may or may not construe the claim as being in substance, broadly a claim for *a die having three internal off-bearing scrap-passages*.

Now what are "*off-bearing*" scrap-passages? They are described in the patent as "three off-bearing scrap-passages, *a*, which *pick up* the internal scraps and *deliver them into the box or hand-piece E*." By examining these passages, as shown in the large views, Figs. 4 and 5, and comparing their length with the thickness of the bretzel shown in Fig 6, or with the thickness of the molding and forming grooves shown in Figures 4 and 5, it will be seen that the off-bearing scrap-passages are passages of considerable length—several times as long as the bretzel is thick. *Hence, the scrap received by them in cutting the first bretzel must remain in them until displaced by scrap received from subsequent bretzels*. And not only so, but their length is so great that three or four bretzels must be successively formed before the internal scrap from the first one will be discharged into the box E. *Their mode of operation is to receive the internal scrap and hold it while it is being pushed up, step by step, by the accession of the succeeding scraps*. They thus "pick up" the scrap, exactly as stated in the specification, instead of merely providing an opening

through and from which the scrap might drop at once as soon as cut out. In the Patent Office model, they are shown as tapering passages, somewhat larger at their back end than at their front end, so as to give the proper clearance and insure the scrap being discharged at their back end instead of dropping from their front end, although the draughtsman has not clearly shown this feature in the patent drawing. There is, therefore, a peculiar applicability and force in the descriptive expression, "pick up," of the specification, and in the peculiar expression, "off-bearing," of the claim. The passages are, it is evident from this phraseology, not designed merely as doors to let the scrap out, but as true *carriers*. A door "picks up" nothing, and "bears" nothing "off;" these passages "pick up" the scraps and "bear" them "off"—holding them securely through several successive strokes of the die, until ready to be delivered into the box E at the back end of the die.

The reason of this is obvious. The internal scrap is three cornered, and, if the dies were thin and the holes open, the scraps would be liable to drop back through the holes or drop back so that their corners would project through, and bad work would be the inevitable result. It is necessary, therefore, *to interpose a barrier* between the loose scrap resting on the back of the die, in the box E, and the operating face of the die, so that the scrap cannot return to the face of the die to plague the workmen; *and in the invention here in controversy, the scrap itself, in its passage through the off-bearing channels, is made to operate as such barrier, to prevent any return of the previously formed and discharged scrap or any of its parts.*

The die is operated on a machine, which cannot be stopped to allow the workmen to remove the discharged

scrap at every stroke. Such scrap must remain, for a considerable period, in the box at the back end of the die. The position of the die cannot be reversed so that the scrap would drop away by gravity, because, in that case, the bretzel could not be properly delivered upon the apron. Hence, as before stated, the scrap must accumulate, during considerable intervals of time, on the upper or back end of the die, whence it would return to do mischief but for the interposed check of the subsequently cut scrap on its way up—being "borne" up—from the face of the die.

It is therefore absolutely necessary that the die should "pick up" the *internal* scrap, and should be "off-*bearing*," as distinguished from off-*permitting*, if we may use the expression—in other words, the passages must operate as *carriers* instead of *doors*. And this is the sense in which we understand the claim to use the words "off-bearing internal scrap-passages."

Reading the claim in this sense, it becomes evident at once that the Huber, and Lampert & Huber dies contained no such off-bearing internal scrap-passages. The passages in that machine did not hold the scrap at all, nor interpose it as a barrier to anything, for no barrier was needed. The scrap, *as fast as cut out*, dropped at once by gravity into the interior of the cylinder. If it had accidently remained in the holes, it would have performed no function there, because none was needed nor could any previously formed scrap ever get into a position to give any trouble. The same is true of the Appel machine, another of the abandoned experiments referred to in the evidence.

The difficulty to be overcome by this peculiar construction of complainants die *was a difficulty capable of being*

experienced only in flat dies having a vertical reciprocating movement in the performance of their work. It is therefore obviously useless to look, for a solution of the difficulty, to any cylinder die, *or any die in which the bretzel is not discharged downward and the internal scrap upward.* The object of this part of the invention was to prevent internal scrap, *upwardly discharged,* from falling back through or partially through the discharge openings.

If it be suggested that the Lampert & Huber, or Huber, dies, *might* be made flat, and altered so as to perform the functions of single dies, and turned bottom up, and put into a cracker machine or other machine having a vertically reciprocating holder, and that they would then operate like our dies and the passage would become "off-bearing" in their functions and mode of operation; we answer in the language of the Supreme Court in *Clough* v. *Gilbert & Barker Mfg. Co.*, hereinabefore quoted, that, in such case, the passages *would be used "in a way in which they were never designed to be used, and are not shown to have ever been used before" complainants' invention,* and that such use is "*not a part of the law of the structure*" of the Lampert & Huber or Huber machines; and, further, that the entire Lampert & Huber or Huber die would have to be radically changed and reconstructed before such passages could be made so to operate. To inquire what *might* have been done with a prior device "is going rather into the region of speculation than of fact" * * * and "is objectionable from that point of view." (*Judson* v. *Cope*, 1 Fish, 616).

"Whether the Colbrooke machine could have been so modified as to do the work of the Kenyon machine, is not in these cases a subject of inquiry."

Wood v. *Cleveland Rolling Mill*, 4 Fish., 557.

The suggestion raises only one more case of "prophesy after the event," which, as we have shown by previous citations (p. 10, *ante*) is not relied upon by the courts as sufficient to overthrow patented rights of property. *It may have been, perhaps, this very difficulty of removing the internal scrap, which drove Huber and Lampert into the cylinder form of machine;* for, in the single-die machines, *it is a difficulty the remedy for which is not at all obvious beforehand*, although it looks very simple and easy "after the event." So far as the Lampert & Huber and Huber machines are concerned, with relation to the flat dies here in controversy, this case falls squarely within the ruling in *Whiteley* v. *Swayne* 7 Wall., 685.

We may, therefore, dismiss all the prior double die machines from further consideration, as being in the nature of things, *entirely out of the track of this invention.* They were not subject to the difficulty, and, therefore, did not contain the remedy.

But the S. S. Marvin machine, testified to by Rumsey (pp. 34—40) and Krebs (pp. 46—49) *did* contain the "offbearing internal scrap-passages or channels," which form the gist of this third claim; and, if the Marvin cutter was an independent invention and was prior in point of time to complainants' invention, then the third claim here in controversy is invalid and void, if broadly construed.

But we submit that the *originality* of the Marvin machine may be doubted, and that, whether original or not *it was not produced prior to complainants' date of invention.*

It is in evidence that Rumsey, who claims to have produced this Marvin machine, *visited the complainants' shops at Columbus, Ohio, several times* both prior and subsequent to June, 1881. (Earhart, p. 287, Ans. 8). He went there, on those occasions, *ostensibly to purchase one of complainants' Lampert & Huber machines, for making bretzels.* (Same answer). He examined the machines in detail and departed, saying that they would consider the matter of purchasing and advise complainants of their decision at some other time. (Same answer). *Instead of purchasing a Lampert & Huber machine, they constructed a single die cutter and first put it into practical use at their bakery in Pittsburg, about June 7, 1881.* (Rumsey, p. 35, near bottom of page). The die so constructed would cut out the general form of the bretzel, and contained the three offbearing scrap-passages, arranged as in complainants' flat dies, *but had no creasers and would, therefore, not make the lines or marks indicating the twist of the arms nor the marks indicating the indentation of the ends of the arms into the bow.* (Ramsey, p. 35, last part of Ans. 6).

Now, by reference to Earhart's testimony, (p. 125, Ans. 4), *it will be seen that complainants' invention was conceived in the year 1879*, before Rumsey's visits to complainants' shops, *and that, during the year 1879, several sketches of such a die were made there by Earhart after consulting with his partners over the invention*; and that, at the time of making these sketches, the complainants had not yet wrought out, to their satisfaction, the form, construction and arrangement of the *creasers*. *In March, 1880*, Crawford sent three setts of sketches from New York to his partners at Columbus, here in evidence as "Complain-

ants' Exhibits New York Sketches, No. 1, and No. 2," and as "Complainants' Exhibit First Sketch,"—of which, the two former setts showed no creasers, while the latter showed all the creasers as in the patent in controversy. The two former setts were, evidently, little or nothing more than reproductions of the prior sketches made in Columbus in 1879; and the latter sett exhibited the maturing and substantial completing of the creasers which they had been trying to develop at Columbus, in 1879. In *March, 1881*, the complainants made a drawing in evidence as "Complainants' Exhibit March, 1881, copy," which represents the entire machine exactly as described and shown in the patent in controversy, with the elongated, tapering off-bearing internal scrap-passages, and all. A tin model was made in the spring of 1880, before the New York sketches were made; a wooden die was made shortly after said sketches; and a brass die, at some subsequent time previous to the commencement of the machine commenced in May, 1882.*

Now, comparing these facts and dates with Rumsey's visits to Columbus for the ostensible purpose of buying a cylinder bretzel-machine, we find that, at the time of Rumsey's first visits, prior to June, 1881, the complainants' had conceived and made sketches of *all that Rumsey succeeded afterwards in embodying in his cutters.*

Some of Rumsey's later visits were made subsequent to June, 1881, (Earhart, p. 287, Ans. 8); and it is a significant fact that, "*some time in the latter part of the year* 1881," Rumsey "attempted to improve" his cutter "by altering it to show lines or impressions on the face of the bretzel, in

*NOTE.—These matters are fully stated and the evidence cited, on pp. 21, 22, 23, *ante*.

closer imitation of hand-made bretzels, which are *twisted* and *the ends pushed down into the bow* of the bretzel," (Rumsey, p. 35, near end of the page), but did not succeed, and abandoned the attempt.

The coincidences here are very striking. Complainants conceived their invention and developed it to a certain stage; Rumsey visited their shops, pretending that he was desirous of purchasing a bretzel-machine, and, instead of buying, went home and made a cutter containing all that complainants had devised and perfected up to that time; then they went on and prefected the creasers; then Rumsey visited their shops; then Rumsey went home and tried to introduce the creasers into his cutter, but, from the inherent difficulty of the work, failed to get the desired results with them. *This* seems to be the history of the transaction, so far as the evidence throws any light upon it. The *tin* bretzel cutter first made for Rumsey, at Pittsburg, in February, 1881, (See p. 35, and p. 44, Defts. Exhibit No. 3; also Defts. Exhibit No. 1), should be considered in view of the *tin* pattern made by Crawford in New York, in March, 1880, and probably taken afterwards to Columbus. The next cutters of Rumsey,—another tin device, with springs and clearing plates (See Defts. Exhibit No. 2; also, pp. 35, 36, and Defts. Exhibit No. 4, on p. 44), followed by a "model" (p. 35, and see Defts. Exhibit No. 5, p. 45), should also be considered in view of the wooden "model" made by complainante, shortly after *March, 1880* and afterwards *lost*.—perhaps lost about the time of some of Mr. Rumsey's visits to complainants' shops to purchase a bretzel machine.

When Rumsey visited complainants' shops, he came in such a way as to disarm suspicion and excite confidence.

He came as the agent of a large business house, apparently acknowledging complainants' rights by professing to be desirous of purchasing a machine from them. He was shown their Lampert & Huber machines and examined them in detail. What conversation ensued and how much was told to him of complainants' plans does not appear, and, in all probability, would not have been remembered by complainants, as they had no suspicions at the time. The complainants' frankness and honesty are abundantly shown by their magnanimous treatment of Huber, (see letter printed at botton of p. 217), and of the Scioto Valley Machine Co. (see p. 170). Whether they were treated with equal fairness and honesty by Rumsey, is a question which, perhaps, no one but Mr. Rumsey could answer on oath, and he would not be likely to confess any wrong doing, however great it may have been. The circumstances of his being in the bakery business for a great many years without conceiving of the manufacture of bretzels by machinery, and of his appearing in possession of the complainants' ideas *just after his visits to their shops on bretzel machine business*, and of his later attempt to introduce the creasers, suggest with great force that his visits gave him more information than the complainants are now aware of. It stands to reason that when he visited their shops to buy a bretzel machine, he did not have the single die invention in possession, for, if he had had, he would have needed to purchase no bretzel machine. He clearly appears to have gone there *without* the idea, and to have returned *with* it. The claim to any originality of conception on his part is, we submit, fairly impeached by the facts and rendered at least gravely doubtful. He was not recalled to contradict or explain Mr. Earhart's testimony

about his visits to Columbus. It is also a suspicious fact, that, when asked (see p. 38) about any conversation he may have had with complainants, he refers only to one conversation with Crawford, at S. S. Marvin & Co's shops in Pittsburgh, and is totally silent about his own several prior visits to Columbus *to buy a bretzel machine*. The "Ear-marks" are decidedly against him.

There are, of course, two possible theories as to Mr. Rumsey's bretzel-cutter, viz.: first, that he stole the idea and worked it out as well as he could from the information obtained at Columbus, and secondly, that he evolved the invention, so far as his cutter shows it, (to wit, as claimed in the third claim) from his own brain.

On the first theory: He probably saw some of complainants' sketches, or had an oral description of their plans so far as matured, and therefore got the idea of cutting out the *shape* of the bretzel and of using clearing rods to relieve the die of something, but did not clearly understand the construction. So he returns home and produces Defts. Exhibit No. 1, *which has no internal off-bearing scrap-passages*, and has holes for clearing-rods to push out the internal scrap *in the wrong direction*. (see Exhibit No. 1). No provision is made in this Exhibit for getting *the bretzel* out of the die; but provision is made for getting the scrap out backwards. *He had not learned his lesson correctly.* Another visit gives him a clearer conception, and Exhibit No. 2 is accordingly produced, in which the off-bearing internal scrap-passages first appear and in which a clearer is provided for removing the bretzel. These two exhibits are made and tried, to see whether complainants' plan will

work satisfactorily. Finding the result satisfactory except as to the *twist* and the *ends of the arms sunk into the bow*, he commences to make and put out his imperfect bretzels. *Later on in the same year, he makes another visit to Columbus, and the result of that is an attempt to get the creasers into his cutter, but, as he has gotten merely the general idea of the creasers, and not the details by which the difficulties inherent in them are to be overcome, he fails to reduce them to a practical success and abandons them. Knowing that he had no right to the invention, he keeps its use perfectly *secret* and does not seek to patent it. (Rumsey, pp. 36, Ans. 10; 40, Ans. 8 to 11). The facts seem to be entirely consistent with this theory, from beginning to end.

On the second theory: Rumsey conceived the same invention that these complainants had conceived, but not till the winter of 1880-1881, (p. 35, Ans. 5), more than a year after complainants' conception and first sketches, and nearly a year after Complainants' Exhibit First Sketch, and New York sketches No. 1 and No. 2, and tin pattern, and wooden die,—and while complainants were working day and night to discover and overcome the inherent difficulties in making and using bretzel-dies. This conception, so orginating, was very imperfect at first, *not including the creasers of claims 1 and 2, nor the off-bearing internal scrap passages and expelling rods of claim 3*, but simply the crude device shown in Defts. Exhibit No. 1. Then, a few weeks later, he advances two steps further, and gets the internal off-bearing scrap passages, and a crude form of

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*As to these bretzels, and their reception by the trade, and their defects, see *Ensign*, (pp. 78-82).

about his visits to Columbus. It is also a suspicious fact, that, when asked (see p. 38) about any conversation he may have had with complainants, he refers only to one conversation with Crawford, at S. S. Marvin & Co's shops in Pittsburgh, and is totally silent about his own several prior visits to Columbus *to buy a bretzel machine*. The "Ear-marks" are decidedly against him.

There are, of course, two possible theories as to Mr. Rumsey's bretzel-cutter, viz.: first, that he stole the idea and worked it out as well as he could from the information obtained at Columbus, and secondly, that he evolved the invention, so far as his cutter shows it, (to wit, as claimed in the third claim) from his own brain.

On the first theory: He probably saw some of complainants' sketches, or had an oral description of their plans so far as matured, and therefore got the idea of cutting out the *shape* of the bretzel and of using clearing rods to relieve the die of something, but did not clearly understand the construction. So he returns home and produces Defts. Exhibit No. 1, *which has no internal off-bearing scrap-passages*, and has holes for clearing-rods to push out the internal scrap *in the wrong direction*. (see Exhibit No. 1). No provision is made in this Exhibit for getting *the bretzel* out of the die; but provision is made for getting the scrap out backwards. *He had not learned his lesson correctly.* Another visit gives him a clearer conception, and Exhibit No. 2 is accordingly produced, in which the off-bearing internal scrap-passages first appear and in which a clearer is provided for removing the bretzel. These two exhibits are made and tried, to see whether complainants' plan will

work satisfactorily. Finding the result satisfactory except as to the *twist* and the *ends of the arms sunk into the bow*, he commences to make and put out his imperfect bretzels.* *Later on in the same year, he makes another visit to Columbus, and the result of that is an attempt to get the creasers into his cutter, but, as he has gotten merely the general idea of the creasers, and not the details by which the difficulties inherent in them are to be overcome, he fails to reduce them to a practical success and abandons them. Knowing that he had no right to the invention, he keeps its use perfectly *secret* and does not seek to patent it. (Rumsey, pp. 36, Ans. 10; 40, Ans. 8 to 11). The facts seem to be entirely consistent with this theory, from beginning to end.

On the second theory: Rumsey conceived the same invention that these complainants had conceived, but not till the winter of 1880-1881, (p. 35, Ans. 5), more than a year after complainants' conception and first sketches, and nearly a year after Complainants' Exhibit First Sketch, and New York sketches No. 1 and No. 2, and tin pattern, and wooden die,—and while complainants were working day and night to discover and overcome the inherent difficulties in making and using bretzel-dies. This conception, so orginating, was very imperfect at first, *not including the creasers of claims 1 and 2, nor the off-bearing internal scrap passages and expelling rods of claim 3*, but simply the crude device shown in Defts. Exhibit No. 1. Then, a few weeks later, he advances two steps further, and gets the internal off-bearing scrap passages, and a crude form of

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*As to these bretzels, and their reception by the trade, and their defects, see *Ensign*, (pp. 78-82).

clearer which interferes with the proper molding and forming of the bretzel, but which is capable of performing its office imperfectly. *And he never gets beyond this point. The creasers prove too much for his ingenuity to overcome. The perfect forming and molding of the bretzel he never attains.* And he stops, with the device half completed, unable to get any further along with the work.

The complainants, on the contrary, perfect the whole device, in all its parts, and thus completely finish the work first begun by them and carried on with constant and unusual diligence, energy and pertinacity to the end.

Is Rumsey's crude device to be allowed, under such circumstances, to override their prior rights? It was actually used only in secret, and for a period of only thirteen months prior to the filing of complainants' application for the letters patent here in controversy. They were the first to conceive, the only ones to mature and complete, and were absolutely diligent in the development and perfection of the machine; and, we submit, their rights as prior inventors should, under the operation of the statute (Sec. 4920), tack back to their first conception and override all intervenors.

Rumsey's operations prove one material point in the case to a mathematical demonstration, to wit, that the flat die invention, both in the creasers and moulding groove (the material elements of claims 1 and 2) and in the off-bearing internal scrap-passages and the ejecting studs (the material elements of claim 3) was not an obvious thing to those skilled in the art, but, on the contrary, required inventive thought and discovery; for, in the first attempt, (Defts. Exhibit No. 1—tin cutter) *he simply produced an old-fashioned cake-cutter without either of those elements.* It hardly lies in the mouth of the defendants to say that these

devices were obvious to everybody, when neither their witness Hill nor their witnesses Rumsey and Krebs, got the off-bearing scrap-passages in their first attempts, nor did Hill get them at all, and when Rumsey was utterly unable to make creasers work even after he got the idea. Things that are obvious and known to the art already do not require study and growth and evolution, as this invention did.

VII. Conclusion.

We submit, therefore, that it stands proved by a fair preponderance of the weight of the evidence, first, that the single flat bretzel die of the patent here sued on was not known in the arts before the date of complainants' invention, nor was so much known in the arts at and before that date that the making of this die involved merely the skill and knowledge of the workman, without the application of inventive study, thought and experiment; and secondly, that the complainants were the true, first, and original inventors of the inventions claimed in each and all of the claims of said patent.

That the invention so made and patented was and is a patentable invention under our statute, see

Many v. *Sizer*, 1 Fish., 17.
Forbush v. *Cook*, 2 Fish., 668.
Whipple v. *Middlesex Co.*, 4 Fish., 41.
Strong v. *Noble*, 3 Fish., 586.
Platt v. *The United States Co.*, 5 Fish., 265.
Putman v. *Wetherbee*, 8 O. G., 320.
Dalton v. *Nelson*, 13 Blatch., 357.
Washburn & Moen v. *Haish*, 4 Fed. Rep. 906.

Eppinger v. *Richey*, 14 Blatch., 307.

Smith v. *Goodyear Co.*, 93 U. S. 492.

And other cases too numerous to mention.

A comparison of defendants' and complainants' devices shows that the infringement is beyond question; and there has been no attempt in the evidence to deny it.

We submit, therefore, that the complainants are entitled to a decree sustaining broadly all three of their patent claims, and to an account of gains, savings and profits, and a perpetual injunction, with the costs of suit.

Respectfully,

JOSEPH R. EDSON,

Lysander HILL & ~~DIXON,~~

Counsel for Complainants.

Supreme Court U. S.
FILED.
OCT 23 1890
CLERK

Supreme Court of the United States.

OCTOBER TERM, A. D. 1890.

NO. 36.

BUTLER, *et. al.*,
Appellants,

vs.

STECKEL, *et al.*,
Appellees.

Appeal from the Circuit Court of the United States for the Northern District of Illinois.

SUPPLEMENTARY BRIEF FOR APPELLANTS.

L. HILL,
Of Counsel for Appellants.

EASTMAN BROS., LAW PRINTERS, 187 WASHINGTON ST., CHICAGO.

SUPREME COURT OF THE UNITED STATES

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SUPPLEMENTARY TO APPELLANTS' BRIEF.

A new work, of great research and remarkable ability, by William C. Robinson, LL.D., Professor of Law in Yale University, entitled *Robinson on Patents*, has come to our attention since the preparation of our brief in this case. In this work, we find the "Nature and Attributes of an Invention" exhaustively analyzed, both in their scientific and legal aspects, with such force and clearness of reasoning and statement as leave nothing more to be desired for the full elucidation and understanding of this subject even in cases heretofore involving the greatest doubt and difficulty. It is impracticable, although it would be useful, to embody Prof. Robinson's entire discussion in our argument; but we beg leave to append the following brief extracts from it, which touch directly upon the vital point involved in this controversy and strongly fortify our position that the court below was in error in its judgment.

From Vol. 1, pp. 145, 146:

"The process of discovery consists in finding out what "was before unknown. The method in which it is con-

" ducted is of no importance. Many discoveries are the re-
" sult of study and research. Others are reached by exper-
" iment based on reasoning or conjecture. Others dawn on
" the mind apparently by accident, without previous atten-
" tion to the subject. The fact of discovery can, in the
" nature of things, be ascertained only through its results.
" *A matter hitherto unknown cannot become known without*
" *an act of discovery on the part of the person to whom it is*
" *first known; and when the unknown is made known it is,*
" *therefore, certain that an act of discovery has been per-*
" *formed.* The sole test of discovery, which any science can
" possess, thus formulates itself in the question: *Has the*
" *unknown become known?*—a question which includes two
" others: What is the unknown? When does the unknown
" become known? In answering the first question the law
" escapes the uncertain speculations of philosophy by
" the adoption of a rule at once definite and practical. A
" thing is unknown when it is neither known in itself nor
" suggested to persons, who are acquainted with that class
" of things, by what is known. *That individuals of unusual*
" *ability may reason from the known fact to the other does not*
" *make the latter also known;** but if the ordinary mind, be-
" ing already familiar with a class of objects, can pass by an
" association of ideas from one of these to others not before
" perceived, the knowledge of the former embraces that
" of the latter and all alike are thus considered known.
" The unknown becomes known when its essential charac-
" teristics are comprehended by the mind. Hence in any
" given instance of alleged discovery, if the necessary attrib-
" utes of some fact or object, heretofore unknown in itself to

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*NOTE.—This is where Judge Blodgett erred. Applying his own great ability and remarkable mechanical intuition to the facts after the way had been made known, he erroneously, but quite naturally, concluded that, because it now seems to him easy, therefore any skilled mechanic ought to have been able to do it.

" the alleged discoverer and not suggested to him by any
" known fact or object, have been brought within his com-
" prehension by his own efforts, the allegation of discovery
" is true, and a substantial addition to his stock of knowl-
" edge has been made. Applying this test to the generation of
" an idea of means, the process of discovery consists in the
" finding out, by the inventor, of some force or capability of a
" force, or some object or susceptibility of an object, or some
" mode of application or availability in a mode of applica-
" tion, which was neither known to him before nor could
" have been suggested to him by anything that was known.
" Whenever, therefore, either of the factors in the idea of
" means is new, in the sense of being hitherto wholly un-
" known to the mind of the inventor, and has not been com-
" municated to him by others, the creative faculties must
" have been in operation and engaged in the process of dis-
" covery."

From pp, 161, 162, 163:

" Where the suggestiveness of the known attribute is evi-
" dent, and hence the process of discovery is excluded, the
" intrinsic novelty of the concrete invention cannot overcome
" the inevitable inference that no inventive act has been per-
" formed. But where the suggestiveness of the known
" attribute is not apparent, and the inventor may thus have
" developed his idea through the process of discovery, the
" intrinsic novelty of the concrete invention is sufficient to
" remove the doubt and affirm the claim of the inventor to
" the merit of an entire inventive act. The intrinsic *utility*
" of the concrete invention is of similar significance. When-
" ever any practically operative means proves itself singu-
" larly beneficial to mankind, the inference is almost inevit-
" able that the idea which it embodies would long before have
" been perceived, *had the constructive faculties of the human*
" *mind alone been able to produce it*, and, therefore, that the

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" association of ideas from one of these to others not before
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" of the latter and all alike are thus considered known.
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" teristics are comprehended by the mind. Hence in any
" given instance of alleged discovery, if the necessary attrib-
" utes of some fact or object, heretofore unknown in itself to

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" the alleged discoverer and not suggested to him by any " known fact or object, have been brought within his com- " prehension by his own efforts, the allegation of discovery " is true, and a substantial addition to his stock of knowl- " edge has been made. Applying this test to the generation of " an idea of means, the process of discovery consists in the " finding out, by the inventor, of some force or capability of a " force, or some object or susceptibility of an object, or some " mode of application or availability in a mode of applica- " tion, which was neither known to him before nor could " have been suggested to him by anything that was known. " Whenever, therefore, either of the factors in the idea of " means is new, in the sense of being hitherto wholly un- " known to the mind of the inventor, and has not been com- " municated to him by others, the creative faculties must " have been in operation and engaged in the process of dis- " covery."

From pp, 161, 162, 163:

" Where the suggestiveness of the known attribute is evi- " dent, and hence the process of discovery is excluded, the " intrinsic novelty of the concrete invention cannot overcome " the inevitable inference that no inventive act has been per- " formed. But where the suggestiveness of the known " attribute is not apparent, and the inventor may thus have " developed his idea through the process of discovery, the " intrinsic novelty of the concrete invention is sufficient to " remove the doubt and affirm the claim of the inventor to " the merit of an entire inventive act. The intrinsic *utility* " of the concrete invention is of similar significance. When- " ever any practically operative means proves itself singu- " larly beneficial to mankind, the inference is almost inevit- " able that the idea which it embodies would long before have " been perceived, *had the constructive faculties of the human* " *mind alone been able to produce it*, and, therefore, that the

" process of discovery has been performed in reference to " some one of the factors of which it is composed."

From p. 169:

" Diversity of ends never results from uniformity of means. " In every cause perpetually resides every effect which it is " able to produce, and as the nature of the effect depends en- " tirely on the nature of the cause, no change can ever take " place in the one without a corresponding alteration of the " other. Thus, while identity of end is no proof of identity " of means, diversity of end cannot exist without diversity " of means, and every really new result furnishes in itself " conclusive evidence that the cause by which it is produced " is also new. *Any invention, therefore, which accomplishes* " *an end never before attained must be intrinsically new, and* " *unless evidently a mere constructive union of known factors* " *must, likewise, have originated in a new inventive act.*"

From pp. 171, 172:

" Novelty of end is ascertained by an examination of its " nature, and by a comparison of its utility with that of " other ends. The end to be accomplished is the satisfac- " tion of a public want. The satisfaction of this want con- " sists in a changed condition of affairs, in which the want " entirely disappears. This changed condition is the effect " produced by the invention, and is the ultimate end to " which the means embodied in the invention tends. Nov- " elty of end is thus a new condition of the things or per- " sons upon which the action of the means embraced in the " invention terminates, and when in their condition novelty " appears, a novelty of means may be safely presumed. " This novelty of end exists whenever the change in the " condition of affairs is a substantial, as distinguished from " a formal, change; and the change is substantial when it " removes a want hitherto wholly unsupplied or satisfies it

" by a change essentially distinct from any previously " known.

" *In cases where a change in the condition of affairs re-* " *moves a want hitherto unsupplied, the character of the* " *change itself becomes of little moment.* No want, however " trifling, is for the first time satisfied without the existence " of a state of things which never has occurred before; and " the production of this state of things requires the oper- " ation of a cause which, in itself or in its mode of oper- " ation, must be also new. This test of novelty of end is at " once the simplest and most reliable. *Given a pre-existing* " *want, and its removal, and the condition of affairs, on whose* " *production the want ceases, must be new.*"

From pp. 174, 175, 176:

" Besides the evidence afforded by the nature of the end " accomplished and its comparative utility, there is another " fact which indicates not only the novelty of the end, but " the necessity for inventive skill in the creation of the " means whereby it is attained. This fact consists in the " unsuccessful attempts of others to produce the same re- " sults. The courts assume that no such efforts would be " made unless the want existed and were felt, while from " the failure of all previous endeavors to supply it they draw " the inference that nothing then existed in the arts from " which the imitative faculties alone could have constructed " a method of attaining the satisfaction now enjoyed."

Professor Robinson's philosophical analysis, supported by copious citations of authorities, and summing up the wisdom and meaning of them all, covers the entire field of controversy in this case. Neither the scientific accuracy of the analysis, nor the masterly logic of its presentation, nor its

complete harmony with the long course of decisions of this court, can for a moment be questioned.

In the case at bar, the "want" existed, and was sharply felt; skilled mechanics and inventors found themselves utterly unable to remove it, failing in every attempt; these patentees—not without great difficulty, labor, and expense—finally succeeded; and since that time the world has possessed the knowledge of a useful and valuable machine, of which it had no knowledge before, and which the largest manufacturers in that line of business did not believe it physically possible to produce. That these patentees conferred a great benefit upon their fellow men, cannot be denied;—shall they not have the reward which the law promises in such cases?

Respectfully submitted,

L. HILL,

Of Counsel for Appellant.

IN THE

Supreme Court of the United States.

OCTOBER TERM, 1890.

No. 36.

THEODORE H. BUTLER ET ALS., APPELLANTS,

vs.

GEORGE STECKEL ET AL., APPELLEES.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS.

Brief on B and &.

LYSANDER HILL,
JOSEPH R. EDSON,
Of Counsel.

JUDD & DE WEILER, PRINTERS, WASHINGTON, D. C.

IN THE

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APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS.

ADDITIONAL BRIEF FOR APPELLANTS ON THE ALLEGED DIES FOR FORMING THE LETTER B AND CHARACTER &.

I have thought it best to group in a single brief all the answers which complainants make to the defense based on the alleged prior dies for making alphabetical letters and characters.

1. We deny that the prior existence of such alleged dies, in form for practical use, has been proved beyond a reasonable doubt.

2. We say that even if it had been satisfactorily proved it would not invalidate our claims nor relieve the defendants from infringement.

I.

As to the alleged prior existence of alphabetical dies for crackers, cakes, etc., and especially the B and & dies.

All the evidence on this subject will be found on pages 47, 57, 62, 64, 72, 100, 101, 102, 103, 105, 108, 111 to 115, 131, 147, 148, 191, 230, 233, 240, 282, 293 of the record; in the testimony of Rumsey (p. 47), Krebs (p. 57), Roth (pp. 64, 230), Marshall (p. 72), Dodge (pp. 100–108), Robertson (pp. 111–115), Gohl (p. 131), Earhart (pp. 147, 148, 293), McMahon (p. 233), Sawyer (p. 240).

DEFENDANTS' WITNESSES.

Rumsey, an interested party, testifies in the most general terms, mentioning no specific letters or figures and no specific time. His testimony does not even tend to establish the prior use of the B and & dies or their equivalents.

Krebs, the servant of Rumsey, testifies in general terms, like Rumsey. He *thinks* he has known of such dies five years. He mentions no specific form of letters, figures, etc., and does not prove the prior use of B and & or their equivalents.

Roth, a real defendant, testifies generally on p. 62, like Rumsey and Krebs, but avers a 20 years' knowledge, and on p. 64 lies about the dies B and &, as he afterwards admits on p. 230. His testimony is too suspicious to establish a defense.

Marshall testifies generally (Ans. 7, 8) like Rumsey and Krebs, but does not specifically prove B and &, nor their

equivalents prior to complainants' invention. He fixes 13 years as the time of his alleged general knowledge of letters, figures, etc., in crackers and cakes.

McMahon (p. 233), *the partner of Roth*, has known of such crackers and cakes from 1875, *but specifically excepts B and & from this statement.* (See Ans. 6.)

Nichols (pp. 236–241), a maker of cracker and cake cutters, describes how cracker-cutters are made, and (Ans. 30) says he knows of cutters for making letters, figures, etc., *but does not say how long he has known of them.* His testimony does not prove anticipation.

Sawyer (pp. 241–248), an old baker, knows of many different forms of cutter, but does not mention letters or numerals. His testimony amounts to nothing on this point.

Durkee (pp. 249–258), a die-maker, gives us a great deal of *opinion*, but no *facts*. He does not mention letters or numerals, nor fix any dates at all.

Callahan (pp. 258–264), an old baker, tells us a good deal about dies and doughs, but mentions no letters or numerals, and no dates.

De Tamble (pp. 275–278) tells us how dies are made, but does not mention letters or numerals, nor fix any dates.

This completes the defendants' list. Only Rumsey, Krebs, Roth, Marshall, Nichols, and McMahon mention cracker and & cake cutters in the form of letters or numerals. None of these witnesses except Roth and McMahon mention B and & or their equivalents, and of these two witnesses, partners in business, *McMahon only mentions these two forms to*

deny any knowledge of them. The evidence of their prior existence, therefore, rests on the uncorroborated testimony of Roth, who confesses having testified erroneously about the very exhibits which he put in evidence.

COMPLAINANTS' WITNESSES.

Dodge, Robertson, and Gohl merely testifiy that, even if such alleged cutters existed prior to complainants' invention, still it could not be predicted, without trial or experiment, whether the same principle could or could not be successfully applied in bretzel-making.

Earhart, one of the complainants, says (p. 147) that he has known of cracker-cutters for 20 years, but of these B and & cutters, etc., only within 3 years (p. 148, Ans. 35).

Crawford, another of the defendants, says (p. 191, Ans. 41, 42, 43) that, although he had been using the Ruger cracker machines for 10 years, he never knew of any cutters in the form of letters, numerals, etc., prior to 1879, nor does he say that he knew of them in that year.

COMMENTS.

1. None of these alleged prior cutters have been hunted up and put in evidence or produced by the defendants.

2. No man except Roth, an infringer, testifies to their prior existence. Even his partner and workmen, who were examined as witnesses, were not asked to corroborate him.

3. The alleged patterns of 1877 have not been produced nor submitted to the scrutiny of our experts.

4. The dies that are produced were made for the purposes of this suit after this suit was commenced.

5. No baker or other practical workman has been produced to swear that he ever had or used such dies prior to complainants' invention.

6. Roth has seriously compromised his own credibility by first offering these dies in evidence *as original dies made in* 1867, and then, after the fraud was discovered by our experts, admitting that this was untrue.

7. The testimony of Ruger (pp. 219, 220, Ans. 10–14), shows that he, formerly the *employer* of Roth (see p. 61, Ans. 2), does not place much reliance on Roth's word, and that Roth told him a deliberate falsehood about this suit.

8. Crawford testifies (p. 188, Ans. 24) that Roth's firm lied to him about the infringement.

If these alleged prior dies were ever in existence and sold or used it was a matter easily susceptible of complete proof, and the burden was on defendants to prove it beyond a reasonable doubt. Their failure to bring such evidence raises a fair presumption that there was no such proof attainable. The defendants were represented by able and careful counsel, skilled in the law of anticipation, and it is inconceivable that he should have suffered this defense to rest on the word of Roth alone, not only uncorroborated but even gravely impeached by his own admitted misstatement *about these very dies*, if they had had corroborating evidence available. They have probably produced all they can get; and, when examined, it amounts to nothing.

It is not enough to prove that letters of the alphabet and numerals had been used as types of cracker-cutters, cake-cutters, etc., prior to complainants' invention, even if the proof establish the general fact, which we submit is not put beyond a fair doubt. The letters C, E, F, G, H, I, K, L, M, N, S, T, U, V, W, X, Y, Z, and the figures 1, 2, 3, 5, 7 require only an ordinary tin cutter, not even approximating the principle here involved. Out of all the letters and numerals, only Q and & involve any creasing or marking of the surface of the letter. Hence the evidence, to establish anticipation, should specifically prove the prior existence and use of the cutters for cutting Q and &, and in no event could the court fairly require less than satisfactory proof of cutters for cutting such letters as B, O, which contain internal scrap to be cleared, but which would not anticipate our first and second claims.

The evidence of McMahon clearly shows that proof of letters and figures generally will not meet the case; for, while knowing of letters and figures from 1875, he specifically admits that he did not know of the B and & forms.

II.

As to the legal effect of such dies, if proved.

1. They would not *infringe* our claims if made and sold after the date of our patent, and therefore would not *anticipate* said claims if shown to have existed before our invention. (Stainthorp *vs.* Elkinton. 1 Fish., 349.)

2. Therefore they can be used only to show that the art had advanced to such a point that no room for invention remained between the prior devices and our machines, but

that it required only the ordinary skill of the workman to pass from the former to the latter.

3. Assuming this to be the question, the burden is on the defendants to prove it. The complainants' patent has a strong legal presumption in its favor, which must be overcom ebefore the defense is made out.

4. The prior device being produced, and the patented device produced, *and appearing on their face to be, in several respects, different at least in construction* as well as *different in actual purpose*, the fact that there was no room for invention between them must be made to appear affirmatively, and, *from the nature of the question, there are only three sources of evidence open to the court on such a subject*, to wit:

First. The evidence of *its own eyes* upon a mere inspection and comparison of the devices; or,

Secondly. The *opinions* of unbiased competent mechanics or experts skilled in the art; or,

Thirdly. The *history* of such efforts as have been made to accomplish the patented result from which to judge whether mere skill or something more than mere skill was in practice and in fact required to make the transition from the one to the other.

Of these three sources of evidence the *third* is by all means the most reliable. The first two sources are mere *opinion*, always liable to error. *The third, however, is the actual test of fact* and is not thus liable to error. A good illustration of this is found in the testimony of defendants' witness, Nichols, in this case. Upon inspection of the devices he thought

that no invention was involved in complainants' die; but, upon being informed of its history, he thought that "*inventive genius of a high order*" was involved in it (p. 239). He had the good sense to rely upon the test of fact and actual experience rather than upon mere preconceived opinions.

The courts rely more upon this third source of proof than upon both of the others together (see cases cited and quoted from our brief filed in the circuit court, pp. 43–45, especially Hoe *vs.* Cottrell, and Pearl *vs.* Ocean Mills), and evidently because it *is* the evidence of fact and not of mere opinion.

As to the second and third sources of evidence above referred to the preponderance of proof is heavily with complainants in this case.

1. As to the second—opinions of practical men:

The opinions formed and expressed *before* the solution of the problem are far more weighty than those formed and expressed *after*. All the opinions formed before the event were *that the result could not possibly be accomplished.* (See citations of testimony on pp. 9 and 10 of our brief filed in the circuit court and testimony of Ensign, p. 89 of the Record.)

Of the opinions formed after the event those of defendants' witnesses are in conflict with those of complainants' witnesses.

But, 1st, defendants' witnesses are mainly infringers or their employés, and are therefore not disinterested and unbiased.

2d. Such of them as are not thus interested are, with the exception of Nichols and Durkee, not practical machinists, and therefore unfamiliar with the difficulties often involved in solving apparently easy mechanical problems. Durkee's testimony is shown to be loose and unreliable, and Nichols, when the facts were put before him in cross-question 26, p. 239, testified that they indicated inventive genius of a high order. (See the review of this class of evidence on pp. 29 to 36 of our brief filed in the circuit court.) *No expert familiar with the indicia of invention* was called for defendants.

3d. Opposed to this testimony are the opinions of the three complainants (interested, of course, but of the same order of proof as most of the defendants' testimony); Dodge and Robertson, two thoroughly competent experts; Gohl, a practical bretzel-maker (see his answers 35 to 38, pp. 131, 132); Appel, a man thoroughly experienced on the subject (see his answer 8, p. 206), and Wilson, a man of large experience (pp. 210 to 213). We submit the opinions of these men, together with the universal opinion *before* the fact, as far more than counterbalancing those expressed by defendants' witnesses.

2. As to the history of the several attempts to solve the problem, we submit it as conclusively proving that something more than mere skill and knowledge of the art was concerned.

The difficulties and labors of the complainants; the failure of Rumsey and his workman Krebs to make the creasers work; the failure of Appel to accomplish the result; the failure of Hill and his associates; the costly attempt of Keller, Myers, Ruger, and others to accomplish the object on a dif-

ferent plan, utterly ignoring what is now alleged to be the simple, obvious, "ten-dollar" plan of flat dies; the making of bretzels for a thousand years without resorting to the dies; the general use of alphabetical dies and similar dies, as is now alleged, for nearly twenty years without seeing that they could be so changed and reconstructed as to serve for bretzel dies; the tracing of Roth and Rumsey to complainants' shops at about the time when they began to infringe, etc., etc., all tend in the strongest possible manner to override any notions we might otherwise form respecting the ease or difficulty of producing this invention. The language of the courts quoted at the top of page 43 and on the last half of page 45 of our brief filed in the circuit court applies exactly, even in terms, to the case now before the court, and we commend it to the court as correctly expressing the law of this case.

Respectfully submitted,

LYSANDER HILL.
JOSEPH R. EDSON.

Office Supreme Court U. S.
FILED.
OCT 28 1890
JAMES. H. McKENNEY.
CLERK

IN THE

Supreme Court of the United States.

OCTOBER TERM, 1890.

THEODORE H. BUTLER, GEORGE W. EARHART and WILLIAM M. CRAWFORD, Appellants,

vs.

GEORGE STECKEL and FREDERICK STECKEL, Appellees.

No. 36.

BRIEF FOR APPELLEES.

THOMAS A. BANNING,
EPHRAIM BANNING,
Solicitors for Appellees.

JOHN H. WHEELER, Law Printer, Cor. 9th & G Sts., Washington, D. C.

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vs.
GEORGE STECKEL and FREDERICK STECKEL, Appellees.
} No. 36.

Brief for Appellees.

May it please the Court:

This is a bill in equity under letters-patent No. 274,264, applied for July 6th, 1882, and issued March 20th, 1883, for an improvement in bretzel-cutters. The claims, briefly, are for dies to cut dough on a flat surface in the shape of bretzels. The object is to make bretzels by machinery that will reproduce the lines and creases shown in the old hand-made bretzels, or pretzels, as they are often called, so as to simulate them in appearance.

A bretzel is an old and well-known article. The witnesses testify that it has been a common bakers' product for many years before complainants began to make dies to cut it. It is a well-known, general shape or configuration, and is described in the record as a heart-shaped cake, with the strip of dough out of which it is made crossed, and the ends lying upon the main bow or body of the bretzel. As it lies on the table it

presents certain clear and well defined outlines and peculiarities of form which must be reproduced or provided for in the die for cutting it.

The evidence shows that for many years before the patentee's invention it had been common to cut dough on a flat surface with dies into any number and variety of shapes and configurations. Birds and beasts of all kinds, men and women of all nationalities or costumes, fishes, leaves, figures, hearts, letters, rounds, ovals, squares, diamonds and other fancy, grotesque or pleasing shapes have thus been cut by dies. The patents to Shrote, 1859, to Webster, 1873, to Erzinger, 1877, show a score or more of different forms into which dough has been cut by dies on a flat surface. And the depositions of the witnesses show beyond a question that for many years before the patent sued on was applied for, it was common to cut dough on flat surfaces by dies into a multitude of various forms.

Caleb H. Marshall, treasurer of the Kennedy Biscuit Company, of Chicago, Ill., and for many years familiar with the business, on page 72 of the record, was asked:

"Q. 7. Are you familiar with the different shapes in which crackers are cut by machinery—that is, by dies or cutters? A. I know that they are cut by cutters in different shapes—a great many different shapes and styles—such as letters of the alphabet, figures, leaves, animals, birds, etc.

"Q. 28. How long has it been customary to cut crackers by machinery in the different shapes named in your last answer? A. Ever since my connection with the business, certainly; I don't know how long before."

George W. Earhart, one of the patentees, was asked in cross examination, on page 147 of the record:

"X Q. 32. Did you ever know cakes or crackers or jumbles cut into a variety of different forms? A. I have seen crackers and cakes that were cut in different shapes.

"X Q. 33. For how many years? A. Well, I should say for ten or twelve years.

"X Q. 34. Name some of the forms into which you have seen crackers and cakes cut—say some eight or ten years ago. A. I have seen crackers cut in round, square, oblong shape. I have seen cakes cut round, square, oblong and in the shapes of stars, crosses, animals, letters of the alphabet, and possibly other shapes that I cannot recall."

William Nichols, a pattern and model maker, on page 237 of the record, was asked:

"Q. 15. About how many different kind of dies for use in bakers' machinery, to cut different forms and configurations, have you made? A. About how many?

"Q. 16. Yes, sir. A. Well, I think their name is legion. I cannot very well tell you. I worked on that kind of work for about three years, steady, and during that time I made different forms for dies all the time, as customers might want them, from a plain cracker up to a fancy menagerie, to cut animals, men and figures of all kinds."

From the patents to Shrote, Webster and Erzinger, and from the depositions of these witnesses, to cite no others, it is therefore established that for many years prior to the patent it was old and well known to cut dough on flat surfaces into any desired shape. Our first contention therefore is that—

The making of a die to cut dough on a flat surface into any particular shape desired, whether bretzel or other shape, required no invention.

When the world had been taught to make dies to cut various shapes out of dough on a flat surface, no contribution to useful knowledge could be made by simply changing the form of one of the old dies to cut some other well-known different shape in the same way. The law is well settled.

In *Smith* vs. *The American Bridge Co.* (3 Banning and A, 567), Judge Blodgett, in considering a patent for dies for making chord bar heads for bridges, said:

"Now, after the art of cutting dies in the face of the hammer and in the face of the anvil so that articles could be shaped to a given pattern under the trip hammer, had been so far developed that an ordinary mechanic could, with dies in an anvil and hammer, or in either the anvil or hammer, produced shapes like those *draw* bar heads, what possible invention was there in cutting dies of another pattern in your anvil or hammer so as to shape these *chord* bar heads? It was simply changing the form of the die. A die which would work, or a hammer and anvil which would work a piece of iron into a *draw* bar head, would work one into a *chord* bar head when you simply change the form of the die. It seems to me that it is preposterous to hold that a man is entitled to a patent for a mere device of this kind. It is not an invention of a new die to change the form of a die so as to make a new shaped article under it. The time may come when it will be desirable to make a chord bar head of different shape from the one which this die makes; and if the principle contended for by the patentee is sound, we should have a new patent for every conceivable new form of die, not only in chord bar heads, but for every other form into which iron can be worked by the aid of dies. There is certainly nothing new in this device; there is no novelty in the mere change of form of the die, so as to change the form of that which is manipulated under the die."

If the language above quoted correctly state the law, it is exactly applicable to and decisive of the complainant's case. If it required no invention to change the shape of the die, which had before formed *draw* bar heads used on cars to the shape that would form *chord* bar heads used in the construction of iron bridges, then certainly no invention was required to change the shape of the cutters or dies, which had before formed or cut men, animals, letters, figures, etc., to the shape that would cut or form bretzels.

As said by Judge Blodgett:

"It was simply changing the form of the die."

"It is not an invention of a new die to change the form of the die so as to make a new-shaped article under it."

"There is no novelty in the mere change of the form of a die so as to change the form of that which is manipulated under the die."

These formulations of the law, quoted from the opinion of Judge Blodgett in the case referred to, are in perfect harmony with the enunciations of the law by this court many years before.

In *Smith* v. *Nichols* (21 Wall., 119), this court said:

"A mere carrying forward or new or more extended application of the original thought, a change only in form, proportions or degree, the substitution of equivalents, doing substantially the same thing in the same way by substantially the same means with better results, is not such an invention as will sustain a patent."

In *Dubar* v. *Myers* (94 U. S., 199), this court said:

"Meritorious inventors are entitled to protection; but it is settled law that a mere carrying forward of an original patent conception involving only change of form, proportions or degrees, or the substitution of equivalents doing the same thing as the original invention by substantially the same means, is not such an invention as will sustain a patent, even though the changes of the kind may produce better results."

In *Lowell* v. *Lewis* (1 Robb., 139), Justice Story, as long as seventy-three years ago, said:

"A mere change of the form or proportions of any machine cannot *per se* be deemed a new invention."

In the old case of *Evans* v. *Eaton* (1 Robb., 199), Justice Washington says:

"We take the rule to be and so it has been settled in this and in other courts, that if the two machines be substantially the same and operate in the same manner to produce the same result, though they may differ in form, proportions and utility, they are the same in principle, and the one last discovered has no other merit than that of being an improved imitation of the one before discovered and in use, for which no valid patent can be granted to anyone."

In *Hall* v. *Wiles* (Fisher's Patent Rep., 439), Justice Nelson says:

"A formal change, such as a change in proportions, a mere change of form or different shape is not a change within the meaning of the law."

In *Pearl* v. *Ocean Mills* (2 Banning and A, 475), Judge Shepley said:

"Mere change of the form of a machine is the work of a constructor, not an inventor. Such a change cannot be deemed an invention."

Judge Blodgett, in his opinion in this case, on page 19 of the record, after speaking of the necessity of skill to make a die which would reproduce the form and appearance of the old hand-made bretzels, said:

"This, however, seems to me not to involve invention, but merely mechanical skill. The cutter might be compelled to experiment some—that is, cut several dies, but that is not invention."

A bretzel, being a well-known figure, any patternmaker of ordinary skill was able to take a bretzel and using it as a

pattern make a die to cut it. After making dies to cut figures, letters of the alphabet, etc., any patternmaker would have known that all he had to do was to change the form to correspond to the shape of a bretzel to cut it. The bretzel presented all the lines and creases, bends and configurations that were required in the die. To make the die was simply to follow copy. This is fully established by the evidence.

George W. Earhart, one of the patentees, on page 158 of the record, was asked:

"X Q. 106. Then the bretzel contained and showed the lines, creases, etc., that you desired to reproduce with your cutters? A. Yes, sir; the hand-made bretzel represented the lines, etc., that we desired to reproduce in a die for cutting them on a flat surface.

"X Q. 107. The die, then, was intended to be the exact opposite of the bretzel—that is, where a line or crease appeared in the bretzel, forming a depression, the die should be full in that place so as to fill such line, crease or depression, and where the bretzel was full or raised on its surface, the die would have a depression or hollowing out at such places. Is this correct? A. That is about the way it would have to be constructed."

William Nichols, a pattern-maker of some twenty-five years experience, on page 236 of the record, was asked:

"Q. 8. What particular kind of dies for bakers have you ever made? A. I have made all the kinds that are used in bakeries.

"Q. 9. Did you ever make what are called flat dies—that is, dies to cut on a flat surface? A. Yes, sir.

"Q. 10. What is a pattern? A. It is exactly the same as the die, and it is used as a pattern from which to make other dies like it—to make as many as you choose of the same kind.

"Q. 11. Do you know what a bretzel is? A. Yes, sir.

"Q. 12. Did you ever see them? A. Yes, sir.

"Q. 13. How are these dies made? A. They bring me the design that they want made, either on paper or, in regard to

cracker machinery, either the cracker, if you like, or anything; it makes no difference; whatever they want made is brought to the patternmaker and he can make it.

"Q. 14. Then, if a person wanted a die to cut bretzels or other forms of crackers or cakes or jumbles which were old, he would bring you either one of the articles itself, or a design or drawing of it. Is that what you mean? A. Yes, sir; that is exactly what I mean.

"Q. 15. About how many different kinds of dies for use in bakers' machinery to cut different forms and configurations have you ever made? A. About how many?

"Q. 16. Yes, sir. A. Well, I think their name is legion. I cannot very well tell you. I worked on that kind of work for about three years steady, and during that time I made different forms of dies all the time, as customers might want them, from a plain cracker up to the fancy menagerie cutter, to cut animals, men and figures of all kinds.

"Q. 17. I will ask you whether it requires, in your opinion, any invention to make such dies? A. Well, no more than being patternmaker; if it is invention to learn the trade of patternmaking, it is an invention to make a cutter. It requires simply the skill of a patternmaker. When a form is given to me or any other skilled patternmaker to make a die to cut such form, we simply apply our knowledge and mechanical skill as patternmakers to make it.

"Q. 18. In making dies to cut an article like a bretzel, where such an article has been furnished to you as a guide or sample, how nearly do you follow the various marks and configurations which it contains? A. We follow the design closely, with the exception of the shrinkage of metals. We make proper allowance for that in making our patterns. Every pattern maker understands that. If told to produce in the dies all the creases and marks shown in the product or article furnished us, which such die is intended to cut, we make the pattterns or dies so as to show such marks or creases.

"Q. 19. State whether, in your opinion, it would require any invention to take a bretzel—say a hand-made bretzel—as a sample or pattern, and make a flat die to cut such bretzel. A. No invention whatever would be required; only the skill of a patternmaker."

George B. Durkee, a manufacturer and designer of machinery, being asked whether, in his opinion, it would involve invention to take a bretzel as a pattern and make a die to cut it, on page 251 of the record, said: "I consider it a mere matter of imitation." On cross examination, on page 252, he was asked:

"X Q. 26. You think a bretzel, then, could be made by any skillful mechanic? A. Why, you hand a bretzel to any machinist and tell him to make a die like that and he would make it, and that is all there is of it.

"X Q. 27. That is, in your opinion, he would be able to make it?' A. I am satisfied that I have certainly three or four men in my shop that could make that die. If I handed them a bretzel they could make it so near that it would be called a bretzel. Dough is very soft stuff, and if you make a die that comes down and fits that bretzel, that is all there is to it.

"X Q. 28. How long would it take you to make a practical working bretzel-die, after being furnished with the bretzel as a specimen? A. That would be a matter of how long it would take a man to cut out a piece of steel. The bretzel gives him the form. I should judge that die was worth ten or twelve dollars—a couple of days' work. A nice thing to make. Of course this die has to be made and cut smooth and all that; this is simply a matter of polish. The form is furnished by the bretzel—no invention. If a man give you any form there is no invention; we simply go by that form. The invention is really in the bretzel itself; it is given you just simply to imitate, that is all."

Martin De Tamble, a manufacturer of bakers' dies and machinery of some fifteen years' experience, on page 276 of the record, was asked:

"Q. 7. Where a die is wanted to cut any particular form of old product or article, and an order is given to you to make such a cutter or die, how do you do it? A. I either take the cracker or drawing, such as the man wants—what-

ever design he wants—he either gives me a cracker or drawing of any kind, and proceed to make the pattern and sharpen it up.

"Q. 8. If the article which the die was intended to cut was some kind of cracker or cake, and a sample were furnished you, would you make the die to correspond to the sample; is that what you mean? A. Yes, sir.

"Q. 9. How is it about the making of dies to cut bretzels? State whether or not you proceed in the same way. I would.

"Q. 10. State whether or not, from your experience in making different dies to cut crackers, cakes, bretzels, etc, on flat surfaces, any invention would be required to make a die for such purpose? A. I should not consider it so.

"Q. 11. State whether or not it requires anything more than ordinary skill to make such. A. No; I think not."

John McMahon, a manufacturer of bakers' machinery since 1875, on page 267 of the record, was asked:

"Q. 9. When your firm receives an order to make a die to cut any particular form or old product, and such old product is furnished you, state how you proceed to make a die to cut it. A. Well, we just make a sketch, give it to our patternmaker and tell him to make it.

"Q. 10. About how many forms of dies or cutters for cutting on a flat surface have you made during the last few years at your factory for cutting dough in bakeries? A. I don't know how many, but I presume we have made hundreds—different sizes and different shapes.

"Q. 12. Where an old product is furnished to you and an order to make a die to cut it out of dough on a flat surface, state whether or not, in your opinion, any invention or anything more than mechanical skill is required to make such die? A. I do not consider that there is any invention at all about it. We have never considered it such.

"Q. 13. How about making a die to cut a bretzel out of dough on a flat surface? A. I do not consider there is any more invention about it than there is about making a die to cut any other shape."

From this it appears that among pattern-makers it is the common practice to take any kind of article, no matter what its shape and configuration, and make dies to cut it. This has been the practice, and has been well understood in the trade for a great many years. It is "a mere matter of imitation" to use the language of Mr. Durkee. This being the case, any competent patternmaker, in reproducing the form of a bretzel in the die, would simply be working in the line of his every-day business. On this point our second contention is that—

The making of a die to cut dough into various shapes on a flat surface was a mere question of mechanical skill and imitation, and involved only the ability of a workman capable of following copy.

The fact that the die was intended to be used to cut bretzels could not impart invention or patentability to it. All that was necessary to do in making it was to reproduce the lines, marks and creases shown in the bretzel itself, as admitted by Mr. Earhart in the evidence quoted.

Some of the claims of the patent mention certain specific parts and call for certain peculiarities or characteristics relating to the particular construction of the die and the framework in which it is mounted. The second and third claims speaks of the die being perforated so that the scraps might pass upwards through it, and calls for expelling studs that should push the bretzel off and keep it from sticking to the die.. The second claim calls for guide-rods, for a base provided with feet, for springs, for a hand piece, and various other details. All of these various details were old in the old cracker cutters that had been in use for many years, and the only thing that was done by the patentees was to

take out the cutter that had formerly been used and put in one of the shape or form of a bretzel. The evidence shows that all of the parts of the machine shown and described in the patent were old and had been used in the exact form, arrangement, combination and function in connection with other forms of dies since 1859, and had been used by the patentees themselves for more than ten years before they applied for their patent. That all of the parts of the machine, with the exception of the peculiarly-shaped die were old is amply established by the evidence as an examination will show. We will quote from some of the depositions of the witnesses on this point.

Jacob Roth, who had had many years' experience in the manufacture of bakers' machinery, on page 62 of the record, was asked:

"Q. 6. State what differences there are between the machines used for cutting cakes, crackers, etc., for many years past, and the bretzel-cutting machine shown and described in this patent number 274,264? A. They are the same thing as a cutter, except in the shape, and the shape we have made just about the same. I should not consider this Butler, Earhart & Crawford machine anything different from cutters of the general style I have been making since 1866.

"Q. 7. Were the cutters you made long before the date of this patent—since, say, 1886—provided with internal scrap passages or channels for carrying off or removing the scrap dough? A. Yes, sir; some were made that way and others were not.

"Q. 8. Were they provided with means for creasing and twisting the dough or not? A. Some cutters we made had impressions showing creases representing a twist. These were made at least ten years ago.

"Q. 9. Then how long have you known personally of the use of internal scrap passages and creases in machines for cutting crackers, cakes, etc.? A. As to scrap passages, they were in use when I first went into the trade—in 1859. I mean internal scrap passages for carrying the scrap out through

the cutter. As to the impressions showing the form of a twist, I should go back ten years at least."

On p. 230, he was asked:

"Q. 3. I call your attention to two exhibits that were introduced in evidence at the time of your other examination, one of which represents a cutter with the letter 'B' in it, marked 'Defendant's Exhibit No. 14,' and the other of which represents a cutter with the character '&' in it, and marked 'Defendant's Exhibit No. 15,' and ask you to state whether these exhibits were produced by you as old original cutters or to represent old styles of cutters. A. To represent old styles of cutters.

"Q. 4. From what were these exhibits made? A. They were made from the old patterns that were made in the year 1877. We have those patterns in our possession now.

"Q. 5. Do you mean that they were made from those old patterns in your possession in all respects or not? A. They were made from those old patterns in every particular as those old patterns were first made in 1877.

"Q. 6. How as to the letters and characters represented in these two exhibit? A. They are made just the same as the patterns.

"Q. 7. How long have you known of cutters like these two exhibits as to everything except the letter and character being made and used? A. I made cutters the same as these two exhibits in the year 1859, and they were in use long before that.

"Q. 8. How extensively, if you know, have cutters like these two exhibits—as to all the features represented in them except the letter and character—been used in this country since you began to make them—in 1859? A. They were in general use; every baker that had a cracker machine has used them. They have been commonly used since 1859 and before.

"Q. 9. State whether or not you made any cutters to cut dough into the letter and character represented in these two exhibits from the patterns which you have in your possession and which you say were made in 1877? A. My firm of Roth & McMahon made the first cutters from those pat-

terns February, 16th, 1878. We made another one from them February 28th, 1878. We have made from those patterns right along ever since, and our books will show the dates of the orders. The dates above given were taken from our books. The cutters so made were sold to bakers and used.

"Q. 10. State how long since you have known of other letters of the alphabet being made into cutters and used, or how long since you have seen cakes or crackers cut into the various shapes of the letters of the alphabet. A. I have known them to be cut into crackers in the year 1877. They appeared in the markets that year.

"X Q. 11. Can you give the name of the person or persons to whom you furnished the cutters you say you made on February 16th, and February 28th, 1878? A. We made one for David Forester, of Cincinnati, Ohio—I think both a 'B' and a character '&'—and another for Mason, of Baltimore, Md. I think he also got both. Sometimes customers would order the whole alphabet, and sometimes selections from it."

John McMahon, a manufacturer of bakers' machines since 1875, on page 232 of the record, was asked:

"Q. 5. State how long since you first saw cutters for cutting crackers, etc., into various shapes? A. In 1875.

"Q. 6. How were they made? A. Just like these models, except that they did not have the letter 'B' and character '&.'"

William Crawford, one of the patentees, on p. 189 of the record, was asked:

"Q. 28. You have said that one of the merits of your invention consisted in the fact that it was applicable to the ordinary cake or cracker machine. Just state whether you have ever in a single instance so applied it. A. We have, in the making of bretzels in our factory.

"X Q. 29. How did you apply it? A. By removing the cracker cutter that was attached to the machine or frame and inserting the bretzel machine in its place, having con-

structed the frame of the machine so that it could be applied to our Ruger cracker machine."

(Note: This machine was afterwards called the McColen machine.)

"Q. 30. Was that a cracker machine made after your invention, and with special reference to the application of your bretzel-cutters? A. It was not. The cracker machine mentioned has been in our factory in use for at least ten years.

"X Q. 31. In this model which has been offered as complainants' exhibit marked 1882, from what machine was the frame-work surrounding the bretzel-die or cutter, and holding it in place, taken or copied; I mean all of the frame work represented in this model except the die? A. It was not taken from any machine whatever, but was made from patterns constructed expressly for the machine—by that I mean the bretzel machine, and we now have those patterns.

"X Q. 32. Of course, I understand that these parts were made expressly for this bretzel-die; but what I want to know is, to state in another way, how the cutters or dies used in cracker machines like that Ruger cracker-cutting machine, are supported or held in place? A. Our Ruger machine holds the cutter by a rod at each end of the cutter.

"X Q. 33. There is a plate through which the die or cutter is forced when it is driven down on the dough to cut, is there not? A. Yes, sir.

"X Q. 34. And a proper hole or aperture in such plate for the die to pass down through? A. Yes, sir.

"X Q. 35. And the die is lifted automatically from the dough after the operation of cutting, and if so, how? A. Yes, sir; it is; by springs or other device.

"X Q. 36. There is a plate above or at the top of such die, is there not? A. Yes, sir.

"X Q. 37. How is the cake or cracker in that Ruger machine that we have been talking about expelled from the cutter or die? A. Some with followers, others with punchers.

"X Q. 38. Is not that the only instance in which you have applied your bretzel-cutters to work in the ordinary

cake or cracker cutting machine? Have you ever so applied it in any other bakery? A. We have so constructed the cutter that it can be applied to any other kind of a cracker machine.

"X Q. 39. You say that the Ruger cracker machine you have been using for some ten years? What has it been used to cut during that time? A. Crackers, cracknels and biscuits?

"X Q. 40. What shapes has it cut? A. Round, square and ovals.

"X Q. 66. I forgot to ask you whether the upper plate in the cutters in your cracker-cutting machine which you have used for ten years or so was pressed down with the cutters in the operation of cutting? Is that the way, is it? A. The whole thing is pressed down with the cutters.

"X Q. 67. While the cutters are being forced through the opening in the lower plate, and as they are passing through the dough on the cloth, is the upper plate pressed down with them? A. Yes, sir; it is.

"X Q. 68. And this is the way it has always been in that machine? A. Well, I suppose so, so far as I know."

Theodore H. Butler, one of the patentees, was asked, in reference to the same machine described by Mr. Crawford as the Ruger machine, but which was corrected by him to the McColen machine, on page 200 of the record, as follows:

"X Q. 27. How long have you used the McColen cracker cutting machine referred to above? A. We purchased it in 1871 or 1872.

"X Q. 28. Did you operate it soon after you got it? A. Oh yes; right along—all the time.

"X Q. 29. Did it operate then as it does now? A. Yes, sir.

X Q. 30. What prevents the lower plates in the cutter used in that machine from coming flat down upon the dough? A. Why, the cutters do come down on to the dough.

X Q. 31. I mean from coming down entirely upon the cloth carrying the dough. A. Are there little feet or projections on the bottom of these plates to hold them the right distance above the cloth? A: Yes; they do.

X Q. 32. This is the way they have always worked? A. I think when cracker machines were first gotten out it may have been different, but this is the way this machine has been ever since we have been using it."

George W. Earhart, one of the patentees, on page 161 of the record, was asked:

"X Q. 121. These other parts of the machine represented in this drawing, besides the dies, were taken from the ordinary cracker or cake machines, such as you have been using for some years, were they not? A. The outer lines, showing the outer part of the cutter frame were drawn to correspond with that of the cutter frame used upon one of our old cracker machines upon which we contemplated using our dies.

"X Q. 122. As I understand, one of the merits of your invention consisted in the fact that your dies could be used in the ordinary cake or cracker cutting machine, so as to cut on a flat surface; is this correct? A. They can be adapted to run on cracker machines such as used by many of the smaller bakeries."

The evidence that the only thing the patentees did was to take out the old die from their machine and put in one of the form of the bretzel is so ample that it cannot be a subject of dispute, and we will refrain from quoting further.

Not only did these old and well-known cracker machines employ dies with all of the parts arranged and operating in the same way as those claimed in the patent sued on, with the sole exception that the dies cut out other shapes than bretzels, but the old dies used also the internal scrap passages, and expelling studs like those of the complainants.' This is explained in the testimony quoted from the deposition of Mr. Roth, and the letter "B" and the character "&," which Roth and McMahon began to manufacture and sell February 16th, 1878, show both of these features. Furthermore,

dies to cut bretzels and containing three internal scrap passages and furnished with expelling studs, creases, etc., were old in the patents of Lampert & Huber, issued November 28, 1876, and February 20, 1880, the drawings of which are shown opposite pages 325 and 327 of the record. The dies of the Lampert & Huber patents were shown on cylinders, but as to the internal scrap passages, expelling studs, creases, etc., this circumstance is of no importance. The specifications of the first of these patents, on page 236, in speaking of the cutters or dies, the internal scrap passages and expelling studs, says:

"The die or cutters *e e'* of the lower cylinder may have their blank portions lift open or perforated as shown at *ll*, to allow the scraps for surplus dough in part to drop into the cylinder, and the corresponding surfaces or portions of the dies or cutters *ee'* upon the upper cylinder projected beyond the surface of the same, as shown at *mm*, to force the surplus dough or scraps through the opening *ll* of the dies or cutters of the lower cylinder."

From all this it appears that machines exactly like the one described and claimed in the patent sued on, except that a die for a letter, figure, or character, etc., was used in the place of the bretzel, had been used for many years to cut on a flat surface before complainants' invention; and dies for cutting bretzels containing scrap passages and expelling studs were old in connection with cylinder machines. If, as we contend the making of the bretzel die to cut on a flat surface involved no invention, over a score of other dies for cutting a score of other shapes on a flat surface, particularly when the bretzel die itself was old on a cylinder surface, its *substitution* in the machine in the place of one of those other old dies, the organization and operation of the rest of the machinery remaining the same, could have involved no invention. Our third contention, therefore, is that—

The putting of a bretzel die, which was old, into a frame which had been long used with other forms of dies for cutting other shapes was a mere substitution and could have involved no invention.

The law in reference to such changes and substitutions is well settled.

In *Stimson* v. *Woodman* (10 Wall., 121), this court said:

"Assuming the plantiff to have been anticipated in the construction of his machine, in every part of it, except that the prior machine used a smooth revolving roller, and the plaintiff a figured one, but which figured roller had beed used for pebbling leather by pressure and was well known, all of which the jury would have been warranted in finding, the ingraving or stamping of the figure on the surface of the smooth roller or the substitution of the old figured roller for the purpose, required no invention."

In *Perry* v. *Co-operative Foundry Co.* (12 Fed. Rep. 150), Justice Blatchford said:

"An anti-clinker opening between a dished grate and the fire-pot existed before, and also a flat grate. All that the patentee did was to substitute a flat grate for a dished one in the arrangement. The relation between the grate and the bottom of the fire-pot so as to leave the space between the two and the space around the edge of the grate, is the same in the two arrangements. The only difference is one of degree as to the quantity of refuse which the rotation of the grate or use of the poker will discharge, or one of convenience as to the character of the poker which will be used, and does not involve invention."

In *Perry Co-operative Foundry Co.* (12 Fed. Rep. 437), Justice Blatchford again said:

"There was no invention in substituting in the given combination an old grate made in two parts for another old grate made in one part preserving the same relation of the grate

to the fire-pot and to the ash pit walls, when no distinctive effect in the combination resulted from the substitution."

Applying the doctrine of these cases to the one in hand, it is plain that the placing of the old die—old in the Lampert & Huber 1876 patent, and old in the letter "B" and "&" from which it contains no patentable difference—in an old machine—old in the patentees' factory, where they had used it forten years, and old in the general trade since 1859—contains no possible element of invention. It was a mere substitution of one old die for another old die in an organization that continued to work as before.

Counsel for appellants, in their brief, insist that bretzel dough is in some way different from other doughs, and that a die which would cut one kind of dough would not cut others. One characteristic of all doughs is, that they are soft and yielding. It would scarcely seem to require any argument, therefore, that a die which would cut any one form of yielding dough would cut another. There is testimony in the record however, that the difference in the different kind of doughs, would present no difficulty whatever to the operation of the same die in different doughs.

Mr. Callahan, foreman of the Dake bakery, Chicago, on page 258 of the record, was asked:

"Q. 8. How many years' experience have you had in making bretzels? A. Well, I have been making them off and on for 25 years; not to such an extent as they are made now.

"Q. 9. Did you ever see a machine make bretzel? A. I have seen a cracker machine cut bretzels.

"Q. 10. What kind of dough is used to make bretzels? A. Any ordinary dough. The quality of the bretzel is made by the stock that is used; what I mean by that is, if more shortening is used it makes it richer—it makes the quality of the bretzel better.

"Q. 11. State whether bretzel dough is so different from other kinds of dough or not that it requires any special kind of machinery to cut it. A. It does not, sir.

"Q. 12. State whether or not you have ever seen bretzel dough cut on any other kinds of machinery. A. I have seen it cut on a cracker machine.

"Q. 13. State how the dies or cutters for cutting crackers operate when used in cutting bretzel dough. A. They operate the same as any other cracker that clears off the die. It don't make any difference what shape it should be in.

"Q. 14. State whether or not cracker cutters will cut bretzel dough as successfully as other kinds of cracker dough. A. It certainly will, sir."

Mr. Roth, on page 264 of the record, was asked:

"Q. 2. State whether or not you have ever seen different kinds of hard dough cut on different kinds of dies. A. I have.

"Q. 3. State what your experience has taught you in reference to whether a die for cutting one kind of hard dough will cut other kinds of hard dough equally as well. A. A die made in the form of a cutter for cutting crackers will cut any kind of hard dough, no matter what shape it is in.

"Q. 4. That is, no matter what shape the die may be changed into? A. Yes sir."

Mr. McMahon, on page 266 of the record, was asked:

"Q. 2. State whether you know what bretzel dough is, or whether you have ever seen it. A. I have seen it.

"Q. 3. State whether you have ever seen other kinds of hard dough for making crackers and other products, or know what it is. A. I have.

"Q. 4. State whether you have ever seen various kinds of hard dough cut by bretzel dies. A. I have seen nearly all kinds of doughs cut with bretzel dies and have also seen bretzel dough cut with other dies.

Q. 5. State whether or not you have ever noticed any difference in the way these various dies cut the various kinds of hard dough. A. I never noticed any difference."

Mr. DeTamble, on page 277 of the record, was asked:

"Q. 12. Have you ever seen different kinds of hard doughs for making crackers, bretzels, etc.? A. Yes, sir.

"Q. 13. Did you ever see such doughs cut on different kinds of machines? A. Yes sir.

"Q. 14. State whether or not a die for cutting bretzels will work successfully and satisfactorily on other kinds of hard dough or not. A. It will.

"Q. 15. State whether or not there is any difference in the different kinds of doughs that would require a different kind of die to cut them. A. There is not, in my opinion."

Charles Sawyer, a baker for 25 years, on page 243 of the record, was asked:

"Q. 11. State whether or not a flat die used for cutting crackers, or jumbles, or nicknacks could be used with bretzel dough, to cut that kind of dough. A. It would be with bretzel dough just the same as it would with any other kind of dough, only, of course, that it would not be in the shape of a bretzel.

"Q. 12. What I want to know particularly is, whether there are any differences between bretzel dough and other kinds of dough that would prevent a die used for cutting other kinds of dough from being used in cutting bretzel dough also? Please state the fact about that. A. I don't think there is, because a bretzel goes through just about the same process as a cracknell biscuit does. This dough is cut out with a die; it is then put into boiling hot water—cracknell dough is—and taken out and baked the same as a bretzel, only a bretzel is boiled in lye water and a cracknell is not.

"Q. 13. Then, in your opinion, a die that would cut one kind of dough would also successfully cut another? A. Yes, sir; it would."

We refrain from burdening our brief with any further evidence on this point. It would seem self evident that a die which would cut one kind of dough—a yielding substance—would cut any other kind of dough—a yielding substance.

In their brief, appellants quoted from Judge Blodgett's decision in reference to overcoming a prejudice against machine-made bretzels. And at the top of page 8 of their brief, they say that there is not a word of evidence to support the assumption that such prejudices exist. Counsel have evidently allowed some of the evidence to slip from their memory.

Mr. E. Nelson Blake, one of the owners of the Dake bakery, Chicago, on page 75 of the record, was asked:

"Q. 3. Do you know what a bretzel is? A. I do. We do not manufacture them, but handle them, selling those manufactured by others.

"Q. 4. Are you acquainted with them as manufactured, both by hand and by machinery? A. I am.

"Q. 5. In your judgment, which is better, the hand or machine made bretzel? A. The hand made.

"Q. 6. How are the two kinds regarded by the trade generally, so far as you know? A. I can only say, so far as our customers are concerned, to whom we have sold both kinds, they much prefer the hand made, at two cents a pound difference in the price—that is, the hand made are sold for two cents a pound more than the other, and we sell twenty of the hand made to one of the machine made."

Mr. C. H. Marshall, treasurer of the Kennedy Biscuit Company of Chicago, on page 71 of the record, was asked:

"Q. 5. Is there any difference in quality between the hand made and machine made bretzel? If so, please state it. A. I think there is a difference. I think the hand-made bretzel, such as we have, are the best. Since I have been connected with the company, we have never handled any machine made bretzels; we have had a great many samples, but the previous manager that had charge before I was there had some, I think, and they did not seem to suit as well as the hand made, and since then we have never had any of the machine-made bretzels.

"X Q. 84. Wherein do you say the hand-made bretzels are superior to the machine made? A. Customers claim that the hand made are the best flavor and sell the best, and give the best satisfaction, and that is the reason we do not take hold of the machine-made bretzels."

When such prominent bakeries as the Dake bakery and the Kennedy Biscuit Company, two of the largest at Chicago, handle the hand-made bretzel, because their customers prefer them to the machine-made bretzel, we submit that Judge Blodgett had ample authority for speaking of the prejudices that existed in favor of the hand-made bretzel.

There is also evidence in the record that other parties at Pittsburg made a die for cutting bretzels arranged, substantially like that shown in the patent sued on and put into actual use in May, 1881. We will not stop to quote the evidence on this point, but it will be found from pages 45 to 60 of the record. On pages 54 and 55 a number of bills are printed serving to fix the dates at which the Pittsburg parties, S. S. Marvin & Co., made these bretzel-cutters. One of these bills, dated May 13, 1881, is for "one brass bretzel-cutter with one cup for model, $13." Another bill, dated, June 7, 1881, was for "one bretzel-cutter, with six cups, $78.35." We think it clear from the evidence referred to that S. S. Marvin, of

Pittsburg, were making and using bretzel-cutters like the one described and claimed in the patent in suit and like the one marked "Defendant's Exhibit No. 2," shown among the exhibits at the end of the record, in May, 1881. The question arises therefor, whether this date is early enough to anticipate the patent. This makes it necessary to inquire when the complainants' made their invention.

The patentees produce a sketch which they say was made in March, 1880, and claim that this fixes the invention at that date This sketch is shown on the second sheet of the exhibits, following page 324 of the record. It is simply the *picture* of a hand-made bretzel, which any one would get by taking a bretzel and making a sketch of it. The maker of the sketch, George W. Earhart, admits, on page 156 of the record, that if one took a bretzel and made a sketch of it with his pencil he would have the same thing as the patentees March, 1880, sketch.

This sketch, which was only a picture of a bretzel, no more represented a bretzel *die* than the bretzel itself did. Mr. Earhart admits this on page 158 of the record. We may, therefore, say that from the admissions of the patentees themselves, it appears that this 1880 drawing was simply the *picture* of a bretzel, and that the *bretzel*, as fully represents the lines, creases and configurations of a bretzel *die* as did the sketch. It is as preposterous, therefore, to claim that the invention of a bretzel *die* was made or partly made when a *picture* of a bretzel was made as to claim that the invention of a bretzel die was made when the *bretzel itself* was made. Yet, what would be said of the claim that the complainants made the invention in March, 1880, because they produced a *bretzel* made then!

The next seen in the act of invention is laid in March, 1881 (record p. 136). This consisted in what was called "Complainants' Exhibit March, 1881, Sketch." It will be found represented opposite page 324 of the record.

All the parts of the machine were taken, as we have seen, from the old cracker machine that the complainants have been using for ten years, except the bretzel-die, this 1881 sketch or drawing was simply a picture of that old machine with the picture of a bretzel for the die. It was simply the picture of the two old things in juxtaposition.

The complainants now took another sleep for a year, and did nothing till the spring of 1882, when they built a machine. M. Earhart (record, 137), there said: "During the spring of 1882 we commenced work on the machine represented in the patent sued upon. This machine was completed in May, 1882, and was put to practical use in making bretzels in our shop as soon as it was finished.

Here, then, we have the genesis and development of complainants' invention. In March, 1880, they or some of them rather, made a picture of a bretzel; in March, 1881, they made a picture of their old cracker machine and old bretzel together; and in or about March, 1882, they began to make a machine which was completed in May, 1882; and March 20th, 1883, they applied for a patent. Until March, 1882, the complainants were laboring to perfect the Lampert & Huber, 1876, cylinder machine and reduce it to practice. They were not working *on the invention in suit*, but on the cylinder machine, on which they claim to have spent some $25,000. (Record, 139, 189.)

But while their minds were on the Lampert & Huber cylinder machine, S. S. Marvin & Co., of Pittsburg, made the device now in controversy and applied it to use. In May, 1881, Marvin & Co. were actually using in their business a bretzel-die, cutting bretzels on a flat surface, in all substantial respects the same as that claimed in each of the claims of complainants' patent sued on. On page 45 of the record Mr. Rumsey, in speaking of the defendants' exhibit No. 2, said: "This cutter was finished and put in operation about June 7, 1881, and is still in use." We think it clear that

they perfected the invention and reduced it to practice one year before the complainants, and so fully meet and defeat the complaints' patent.

In concluding their brief prepared for this court, counsel for appellants indulge in a burst of eloquence to the effect that this bretzel machine is one of the things for which the world has waited for ages, groping in darkness and helplessness because they did not possess it. And yet, they tell us in their brief used in the court below and filed in this court that the bretzel, the thing which this die is intended to cut, has established itself at last as the indispensable "adjunct of a lager beer saloon." Is it possible that the world has wanted for ages for a machine to cut this indispensable adjunct to a lager beer saloon!

In conclusion we submit that in view of all the foregoing, the patent sued on cannot be sustained, and we respectfully ask that the decision of the court below be affirmed.

THOMAS A. BANNING,
EPHRAIM BANNING,
Solicitors for Appellees.